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# ORIENTATION OF CANADIAN AGRICULTURE

A TASK FORCE REPORT

*Domestic Policies  
and External  
Factors which  
have Influenced  
the Development  
of Canadian  
Agriculture*



Volume II

1977



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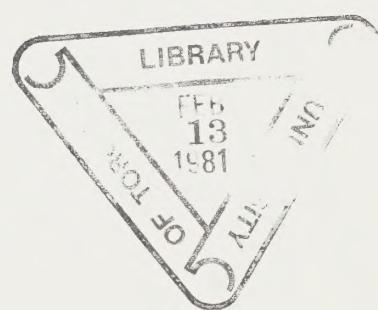
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## FOREWORD

The Task Force on the Orientation of Canadian Agriculture was set up by the Senior Management Committee of Agriculture Canada with the following terms of reference: to describe Canadian agriculture and its evolution since 1950; to examine federal agricultural policies and programs; and to propose alternative planning options for agriculture consistent with national objectives.

Members of the Steering Committee were: B.B. Migcovsky, Chairman; D.G. Hamilton; M.J. Heney; A.E. Hannah; J.E. McGowan; and G.I. Trant.

Members of the Task Force were: W.S. Ferguson and W.J. Anderson, Co-Chairmen; C.J. Bishop; C.D. Caldwell; A.S. Johnson; and W.H. Leggett.

We wish to pay special tribute to the contribution of Dr. W.S. Ferguson whose untimely death occurred part way through the process of preparation of these reports. Dr. Ferguson served as Co-Chairman of the Task Force and made a major contribution both to the background philosophy and organization of the study. In particular, the review of the agricultural resources of the country and the production potential from their efficient use attracted his attention. The sections on these topics reflect many of his ideas. As they were still unfinished at the time of his death, others have had to carry them forward, but his competent leadership in these areas remains evident. Dr. Ferguson was keenly interested in the whole project and its implications for future planning of the industry, and his sincere dedication to the development and preparation of the reports is gratefully acknowledged.

Volume I of the report contains 21 chapters which describe Canadian agriculture and changes that have taken place since 1950. Chapters 1 to 9 cover production and market structure, resources, input supply system, institutional services and domestic food utilization. The material in chapters 10 to 21 is concerned with commodity groups; these chapters, therefore, contain a more detailed description of the situation with respect to livestock and crops.

Volume II contains an analysis of the goals, programs, instruments and performance indicators of Canadian agricultural policy.

Volume III includes five sections which examine:

- (1) broad scenarios of the future demand for and supply of Canadian agricultural products;
- (2) the case for maximizing agricultural production;
- (3) instability in Canadian agriculture;
- (4) a family-farm oriented agriculture; and
- (5) various economic instruments which have been used or proposed to manage agricultural supply and demand.

Volume IV has been written for Senior Management. It contains summaries of Volumes I, II and III and the conclusions of the Task Force.

The authors of the papers in Volumes I, II and III are listed in each Volume. With the exception of (5) Volume III, the papers were prepared by officials of Agriculture Canada. Ms. Lucie Larose edited all the manuscripts, supervised the final typing and preparation of the charts and made the arrangements for printing. These tasks involved many hours of painstaking work, which the Steering Committee and Task Force gratefully acknowledge. Special thanks are also due to Dr. W. Pigden for his help and advice in preparing the papers on animal products and the supply scenarios.

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Leung, D.

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## A. THE GOALS OF AGRICULTURAL POLICY

### A.1 CANADA'S NATIONAL GOALS

#### 1.1 THE NEED TO SPECIFY NATIONAL GOALS

A major task of this project is to assess the effects of making certain choices among a number of feasible alternative directions in which Canadian agricultural policy might develop in the future. A list of all the things which might change because of changes in agricultural policy would be tediously long and of little value. Some test must be applied in order to judge whether or not an effect is relevant and significant. An appropriate test is to determine if the effect can be related to the achievement of an accepted goal of agricultural policy. For example, one conceivable effect of a change in agricultural policy might be a change in the ratio of wheat production to the production of other grains in Canada. However, this effect will only be relevant to the choice between alternative policies if it is seen to be related to the adequacy of farmers' income, or to the level of domestic retail food prices, or to some other goal or performance indicator. Thus, the selection of those effects of changes in agricultural policy which are to be described must be preceded by a specification of policy goals.

The goals of agricultural policy, however, form only one link in a hierarchical chain of means-and-ends which, in the present context, has Canada's national goals at its apex. Any intervention by the public sector in some aspect of the economic, social or political life of Canadian society must be justified in terms of expected changes in the welfare of some citizens. In nearly all cases, an intervention will decrease the welfare of some individuals while increasing that of others. Because of the social and economic interdependence of different sectors of society, an intervention in any one sector will usually have welfare impacts on individuals in other sectors. In this respect the agricultural sector is no exception. For example, agricultural research and development raises farmers' incomes through lower costs and higher yields and benefits consumers by providing better quality food at lower relative prices. It cannot be assumed therefore, that because a program is applied in one sector, its justification comes only in terms of its impact on the welfare of people engaged in that sector alone. Also, since the Government does not wish to discriminate between sectors in terms of its concern for the welfare of the people involved in them, 'sectoral' goals should not be pursued for their own sake, but should instead be justified by their contribution to national goals.

An essential distinguishing characteristic of the national goals which are identified in this analysis is that they are close to being ultimate or

final 'ends', pursued for their own sake. Other lower-order concepts, which are here called Agricultural Goals, Instrumental Goals and Program/Policy Instruments, respectively, are additional elements in the chain of means-and-ends which become progressively more recognizable as 'means'. The identification of national goals is therefore a process of selecting those objectives which do not need to seek their justification by reference to the achievement of something else. For example, efficient production is not a national goal because it is not sought for its own sake, but as a means to higher incomes for farmers and/or lower food prices to consumers.

The ultimate goals of agricultural policy are not necessarily different than those of the policies developed in other sectors. All are national goals in the sense that the term is used here. However, agricultural policies are directed toward a particular subset of the spectrum of national goals, and are carried out through programs and policy instruments which reflect the special characteristics of the agricultural sector.

The national goals defined and discussed in the following pages were derived by reviewing official statements and documents issued by or on behalf of the Government of Canada during the last decade.

## 1.2 NATIONAL GOALS TO WHICH AGRICULTURE CONTRIBUTES

Five of the eight national goals to which agriculture makes a significant contribution are primarily economic in nature. These are:

- Rising Real Income;
- Stability of Prices and Income;
- Equitable Distribution of Income;
- Full Employment;
- Balanced Economic Development.

A sixth goal, Improved Quality of Life, emphasizes social, cultural and environmental values, while the nation's political climate is the focus of the last two goals, Harmonious Federal/Provincial Relations, and Peaceful, Responsible International Relations.

These eight goals encompass the range of national aims whose achievement is substantially affected by the performance of the agricultural sector. They do not purport to include all of Canada's legitimate national aspirations. For example, two important national objectives which they do not address are the maintenance of Canada's territorial integrity and the preservation of internal law and order. Goals such as these are omitted because their attainment is not directly influenced by the functioning of the agricultural sector.

These national goals are worded in a very general way which allows most people to support them as ultimate objectives even though they might strongly disagree on the appropriate means to be adopted in achieving them. While great precision is not possible, it is necessary to clarify the interpretation being placed on the phrasing of these goals in the present context. The following paragraphs therefore examine each of the eight goals in turn, in order to answer the following questions:

- From what sources was the goal drawn?<sup>1</sup>
- What meaning is being attached to the phrasing of the goal for purposes of this document?
- What are some alternative or closely-related expressions of this same goal?
- What measures might be useful in assessing the extent to which this goal is achieved?

#### 1.2.1 Rising Real Income

In the 1970 Budget Speech, the Minister of Finance described the Government's first economic objective as "a steady and substantial improvement in the real income of Canadians everywhere." In the same speech, this goal was restated as "a steady and sustainable improvement in the standard of living of all Canadians."

Rising Real Income is interpreted as meaning that, regardless of the level of prices, the physical quantities of goods and services that the average Canadian is able to acquire with his current income, increases each year. In other words, for the Nation as a whole, money income must rise faster than the general price level. Although increases in average income could mask decreases for particular functional groups or specific regions, such problems would be dealt with in pursuing other goals such as an equitable distribution of income and balanced economic development.

The customary acceptance of the national accounting relationship between output (production) and income has meant that the goal of rising real income is often discussed in terms of 'economic growth' or 'economic output'. Increased output, however, is not sought for its own sake, but rather for the higher income which it brings to producers and the additional purchasing power it provides to consumers, thus enabling both groups to more fully satisfy their wants. Expressing the goal of rising real income in terms of economic growth or output can be confusing because the latter are closely related to at least two distinctly different national objectives. Increased output of goods and services (under the assumption of stable aggregate demand) has been cited by the government as a significant contribution to

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<sup>1</sup>Source references cited in the text are typical examples only.

reducing inflation, and thereby achieving the goal of price stability. In addition, the government has also acted to stimulate economic growth in order to create new jobs, thereby helping to reach the goal of full employment. It should therefore be kept in mind that the goal of rising real income per head is mainly served by that part of increased economic output which results from increased productivity.

Frequently, one sees the phrase "an improved or increased standard of living" used as a synonym for rising real income. However, the term "standard of living" is frequently understood to combine elements of the economic concept of real income with the broader concept of "quality of life". In this analysis, a distinction between these two aspects of a better life will be maintained.

The money value of net national income (NNY), divided by the population of Canada and deflated by the cost of living index, provides a measure of the progress in achieving this goal. Since the relationships of NNY to gross national income (GNI) and to gross national product (GNP) change quite slowly over time, and since the annual increment in population is a very small fraction of the total population, the aggregate deflated values of GNI or GNP are useful proxies for the level of real income.

### 1.2.2 Stability of Prices and Income

Price stability has been referred to in most recent Throne Speeches. The Budget Speech of May, 1972, stated that "this government is committed to reasonable price stability." In February of 1973, the Budget was declared to be "aimed at reducing inflationary pressures in Canada and at offsetting the effects of past inflation." In May 1974, the Budget Speech stated that "the challenge facing the country is to break the inflationary spiral." Again in September 1974, the Budget Speech claimed that "for Canada as well as for most of the world the most serious problem is inflation."

The key concepts here are those of inflation and of the rate of inflation. The latter usually means the percentage increase, from one year to the next, in the number of dollars it takes to buy a given package of goods and services. A distinction should be drawn between two aspects of the rate of inflation. One is its average level over a period of years. The other is the degree of short-run variation in the rate of change. There is no indication that the Government aims to reduce the long-run rate to zero but government documents frequently stress the desirability of moderating short-term fluctuations in the rate of change of prices. It is not 'no change' but 'stable change at an acceptable level' which seems to be the relevant national goal. In 1964, the Economic Council of Canada suggested that this rate might be 2 percent, but by 1972 the Council was talking in terms of 3 percent, while the Anti-Inflation Board's target for 1977 was set at 6 percent.

Some people regard economic stability only as a means to an end rather than as an end in itself. They argue that through the confidence and certainty it generates about the future economic climate, the ultimate goals of more efficient resource allocation (and hence higher productivity and incomes) will be facilitated. Without denying the validity of this approach, it is useful to take the somewhat broader view, adopted here, that an enhanced degree of stability is in itself an important component of the welfare functions of individuals and therefore of the nation as a whole.

Measures which can be useful in judging the extent to which the goal of price and income stability is achieved include the cost-of-living index in its various specific forms, indexes of wages and salaries at selected levels of aggregation, and time series of real per-capita income by functional categories. Associated with each of these indexes, there is an average rate of change over time, as well as a variance and standard deviation, which can be used to compare the magnitude of fluctuation about the trend.

### 1.2.3 Equitable Income Distribution

Statements referring to the goal of rising real income are frequently qualified by adding the phrase "for all Canadians", or words to that effect. Such phrases imply a concern with the distribution of national income as well as with its aggregate level.

One of the five listed purposes of the 1973 Budget was to ensure that "older Canadians share more fairly and more fully in the growing national prosperity." That Budget Speech also declared "that all regions (should) share equitably in our growing wealth, because national unity demands fair shares in national prosperity." Later on, the Budget Speech of May 1974 stated that it was imperative "that the burden of inflation, for as long as it still exists, be equitably shared."

It is important to recognize that an equitable distribution of income is not necessarily an equal distribution of income. The Government does not wish to eliminate incentives to improve one's relative financial position since these provide a principal driving force behind much economic innovation and progress. At the same time, it recognizes that there are large inequalities in the ownership of the means by which income is earned (money capital and human capital such as education, training and skills) and that, in the absence of some Government intervention, such inequalities will tend to widen.

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<sup>2</sup>In the absence of progressive income taxes and estate taxes, for example, the proportion of total wealth in the hands of the most affluent would have risen much faster than it actually has.

Hence, the goal of an equitable distribution of income must be seen as a compromise between complete egalitarianism and complete laissez-faire. There are two broad approaches to its achievement. One is to try to ensure that all Canadians have as equal an opportunity as possible to acquire the means to earn an adequate income, largely through access to education, training and employment opportunities. The other approach is to redistribute or transfer income by taxing the 'haves' and assisting the 'have nots', on the basis of individual, regional, sectoral and/or age-group criteria. In a broad sense, this goal reflects a social concern for the weaker and less well-endowed members of society. Its root elements of 'helping thy neighbour' and 'sharing the fruits of labour', form an essential part of the ethical foundation of civilized societies.

An 'equitable distribution of wealth' is sometimes used as an alternative way of stating this goal. But this phrasing fails to distinguish between the stock concept of wealth and the flow concept of income. Government efforts to augment or diminish the wealth position of citizens have mainly consisted of a few programs involving capital grants to individuals, along with provisions for some taxation of estates and of capital gains. It appears that the government is more concerned about inequalities in annual income flows than about inequalities in ownership of the means to augment such flows.

The Gini ratio is a useful statistical measure of the distribution of income which may be calculated from the same data required to illustrate an income distribution pattern with a Lorenz curve. Also useful are changes in the average income of specifically defined sub groups of the populations, particularly if viewed in relation to the population means. These sub-groups may be defined along regional, age-group, or sector-of-employment lines. The number and proportion of the population whose income falls below a predetermined level is another measure of success in achieving the goal of an equitable income distribution.

#### 1.2.4 Full Employment

Recent Budget Speeches have consistently voiced the concern that this goal was not being achieved. In the Budget Speech of May 1972, it was said: "My first words to this House as Minister of Finance were that my most urgent priority was jobs. This remains my first priority." The following year, the 1973 Budget Speech of 1973 put it this way: "The purpose of this budget is, first and foremost, to bring about a substantial reduction in unemployment ... this budget is aimed at...the greatest possible increase in the number of permanent, satisfying jobs for our rapidly growing labour force." Later, the 1975 Budget Speech stated: "Our greatest challenge is the creation of productive and satisfying jobs for the rapidly growing numbers of Canadians who want to work."

In its Annual Review issued in 1972, the Economic Council of Canada suggested that "full employment does not mean 100 percent of the labour force is employed, since there will always be a certain amount of voluntary or unavoidable employment as workers move from one job to another." That statement appears to be a clarification of the wording in the Act which established the Council in 1963 and wherein the relevant goal was stated as "the highest possible level of employment." Appropriate target rates of employment in Canada have been suggested by the Economic Council on several occasions but, as is true of their target rates of inflation, these have been revised upwards (3 percent in 1964, 4.5 percent in 1972) with the passage of time in order to make them more realistic and attainable. Structural changes in the Canadian labour force may now be consistent with social acceptance of an overall unemployment rate as high as 5 or 6 percent. In comparison with other national goals, the concept of full employment is relatively unambiguous, even though both conceptual and empirical problems with its measurement remain to be solved.

The goal of full employment is often spoken of in terms of high or low rates of unemployment while omitting any reference to the effect of changes in labor force participation rates. This is partly because there has been no explicit adoption of a target participation rate. In fact, government policies in this area often appear to work at cross-purposes. For example, subsidized day-care centres tend to increase labour force participation, while encouragement of early retirement operates to reduce it.

The basic indicator of success in achieving the goal of full employment is the number of people actively seeking jobs, expressed as a percentage of the total work force and adjusted for seasonal variation. Additional information can be provided by examining job vacancy rates, trends in the total number of Canadians employed, changes in the average length of the period of unemployment and unemployment rates of specific subclasses of the total labour force. In regard to the latter measures, there is a tendency to emphasize the unemployment rate among adult males and/or heads of households. When making comparisons over time, rates for these groups have the advantage of being less influenced by short-term movements such as the entry and exit of students and other part-time workers.

#### 1.2.5 Balanced Economic Development

One of the four main objectives of economic policy set out in the Throne Speech of January 1973 was "to ensure that all regions of the country benefit from the prosperity brought about by an expanding economy." In the same speech, it was stated that "the Government recognizes that Western Canadians wish to build industrial strength on top of their region's great resource and energy base. As the whole economy continues to grow, a greater measure of decentralization of industrial activity will be necessary to achieve this desired regional objective." More recently, the draft Government Priorities paper of January 1975 listed, as one of five main thrusts: "Greater balance in the distribution of people and in the creation and distribution of wealth between regions."

The goal of balanced economic development is difficult to define with any degree of precision. It appears to imply the maintenance of the existing spread of population throughout Canada, but has also been interpreted to support a shifting of investment and employment into disadvantaged areas. Operationally, attempts to achieve it are often aimed at equalizing the gains in labour productivity from one region to another, an objective which is consistent with maintaining current relative densities of population. A third interpretation has been that the primary concern should be to achieve a desired balance in the proportions of economic activity (at the national, regional or provincial level) represented by primary industry, manufacturing, service industries, and government. This interpretation brings this goal closer to the goal of an equitable distribution of income, but with the emphasis on equity between regions, rather than between individuals or functional groups. Finally, balanced development can also refer to the conservation of scarce resources for the use of future generations (i.e., adopting a far-sighted approach to development). In this sense, the goal would be closely related to that of an improved quality of life.

This goal is often cited in the context of 'regional development', with the focus being on regions which are less developed than other parts of the nation.

Comparative growth rates in Gross Domestic Product (GDP) between regions and/or provinces provide an aggregate measure of success in achieving this goal. Additional information can be obtained by comparing changes in real income per head between provinces and by examining proportionate changes in population.

#### 1.2.6 Improved Quality of Life

A key concept in government policy has been to foster a just, tolerant Canadian society. This encompasses a list of related aims in the fields of social security, law reform, bilingualism, resource conservation, better mental and physical health, and tolerance of a wide diversity of life-styles.

The phrase 'quality of life' is often understood to encompass nearly all of the factors which influence the well-being of an individual but to which his income does not provide direct access. Such factors include the condition of the natural environment; levels of pollution; the quality of publicly provided facilities like social security, education, health, law enforcement, mail service and transportation; the degree of individual freedom; and the ratio of work time to leisure time. The degree to which individuals are socially isolated is a particular aspect of the quality of life which has concerned the Government in recent years.

The phrase 'standard of living', is sometimes used interchangeably with the quality of life, but more often is understood to include the effect on an individual of monetary variables, such as the level and stability of income, in addition to non-monetary factors.

The term "quality of life" covers, but is not confined to, such more specific concepts as multiculturalism, bilingualism, freedom of information and expression, environmental protection, equality of opportunity and rights of privacy.

Recent research in the field of social indicators has provided a large number of potentially useful measures of particular dimensions of the overall quality of life. Some examples are: average school leaving age or grade completed, crime rates, pollution indices, suicide rates, average age of death, and per-capita availability of public facilities such as hospital beds and parkland.

#### 1.2.7 Harmonious Federal-Provincial Relations

The Throne Speech of February, 1972 stated: "Both the effectiveness and the quality of any program for the provision of services to Canadians depends increasingly upon a harmonious fiscal relationship between the Federal Government and the governments of the ten provinces." Along the same lines, the Throne Speech of January, 1973 declared that "the growing complexity of our society calls for increasing coordination of federal and provincial government programs."

This goal is sometimes referred to in phrases which emphasize 'proper' relationships, either in a constitutional sense or in the diplomatic sense of protocol and adequate consultation. While important, these procedural aspects can be more usefully viewed as part of the process of achieving this goal. Measurement of progress towards this goal is extremely difficult and highly subjective. A systematic review of media reports of meetings of first ministers might disclose some trends.

#### 1.2.8 Peaceful, Responsible International Relations

It has been government policy to accept new international responsibilities particularly with regard to assisting developing countries. Two aspects of this thrust have been emphasized: 'sharing Canadian resources', which refers to aid and market access, and 'alleviating international crises', which refers to reserve stocks of food and to refugee relocation.

This goal is sometimes defined by describing its opposite, i.e., the adoption of an isolationist, inward-looking posture vis-a-vis the rest of the world. The goal emphasizes living up to international commitments, even when so doing may involve substantial short-term costs.

The concept of neutrality is occasionally associated with this goal. A neutral stance, however, may not always be consistent with peaceful and responsible international behaviour, since constructive alliances can help to ensure peace and stability.

The degree to which this goal is achieved can be measured in terms of share of national income devoted to aid and international welfare. Very poor performance might be revealed by a large number of diplomatic incidents (e.g., withdrawal of representation, harshly worded protest notes) or by observing a consistent failure on Canada's part to gain support for its position in various international bodies.

## A.2 AGRICULTURAL GOALS AND THEIR IMPACT ON NATIONAL GOALS

Figure 1 displays the links between Canada's national goals, examined in Section A.1, and the operational program/policy instruments by means of which the higher-level goals are intended to be achieved. This section and the following one discuss the two intervening levels of goals and relate each of them to the next highest level.

As illustrated in Figure 1, the agricultural sector contributes to national goals by pursuing broad objectives which are, in part, unique to this sector but in other respects are shared by other sectors of the economy. These ten broad agricultural goals form the rows of Matrix 1 and are pursued primarily because of the contribution they make to the national goals appearing at the top of its columns.

Identification of the agricultural goals was a three-stage process. First, an initial list was made of the areas in which agriculture makes a unique contribution to each of the national goals. Second, documents were examined in which the government's objectives for the agricultural sector have been spelled out. These included speeches by Ministers of Agriculture, submissions to Parliamentary Committees on Agriculture, and budget narratives prepared by the Department. Finally, the phrases turned up in the foregoing steps were reduced to ten by eliminating all those which were essentially repetitive or which could easily be identified with either a national goal, on the one hand, or a lower-level (instrumental) goal, on the other.

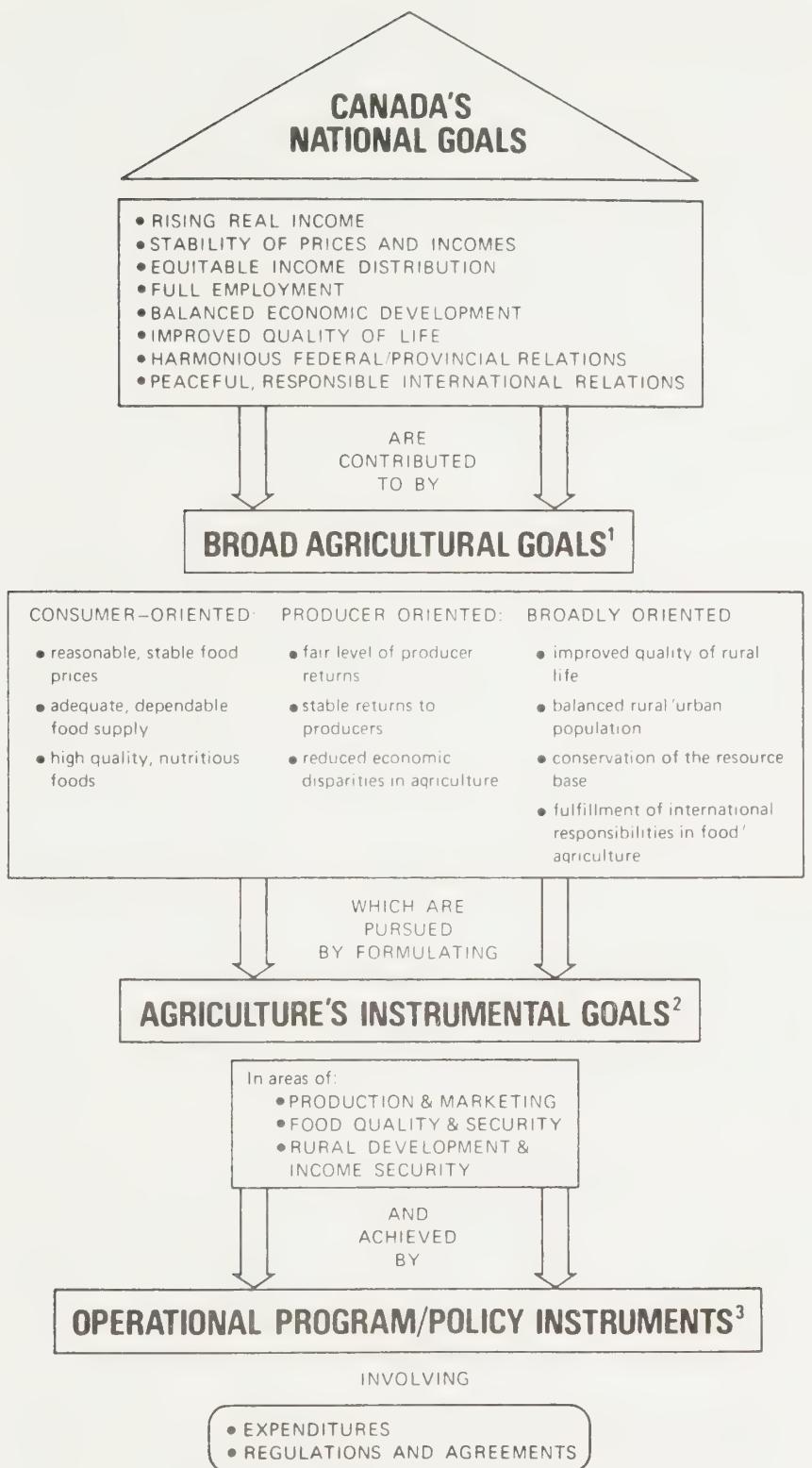
The remainder of this section discusses each of these broad agricultural goals in turn and enlarges upon the cell entries appearing opposite each goal in the rows of Matrix 1. These cell entries consist of plus and minus signs which indicate the strength of the relationships between the agricultural and the national goals.

### **2.1 CONSUMER-ORIENTED GOALS**

#### **2.1.1 Reasonable, Stable Food Prices**

This goal has two distinct aspects which are so closely related that their essential difference is often overlooked. The aspect of stability will be

FIGURE 1



<sup>1</sup> SEE MATRIX #1 FOR LINKS BETWEEN NATIONAL GOALS AND AGRICULTURAL GOALS

<sup>2</sup> SEE MATRIX #2 FOR LINKS BETWEEN AGRICULTURAL GOALS AND INSTRUMENTAL GOALS

<sup>3</sup> SEE MATRIX #3 FOR LINKS BETWEEN INSTRUMENTAL GOALS AND PROGRAM/POLICY CATEGORIES

Agricultural Goals (Contribute to National Goals)		Rising Real Wage	Stability of Prices	Equitable Income Distribution	Full Employment	Balanced Economic Development	Improved Quality of Life	Harmonious Intergov'tl Relations	Peaceful International Relations
CONSUMER-ORIENTED: Parsimonious, Stable Food Prices	++	++	+			-			-
Adequate, Dependable Food Supply		++		+	+	+			+
High Quality, Nutritious Food							++		
PRODUCER-ORIENTED: Fair Level of Producer Returns	++		+	++					+
Stable Returns to Producers	+		++			+	+		-
Reduced Economic Disparities in Agriculture				++	+	++			+
BROADEN-ORIENTED: Improved Quality of Rural Life						+	++		
Balanced Rural/Urban Population	-					++	++	+	
Conservation of the Percure Base			+			++	++		
Fulfillment of International Responsibilities in Food Agriculture	-					+			++

Cell entries reflect judgements about extent to which achievement of National Goals is influenced by progress toward Goals for Agriculture: minus sign (negative impact); blank (negligible); plus sign (positive); double plus (large positive). Plus and minus entries in the same cell indicate that the Agricultural Goal can be achieved in several ways, one or more of which can have a negative impact on the relevant National Goal.

interpreted (as it was for the corresponding national goal) as an acceptably low rate of change in money prices in the long-term, together with the elimination of sharp short-term (annual and cyclical) fluctuations. Since this goal focuses on food prices, the primary concern is with the short-term type of instability.

Turning to the other aspect, it would be unreasonable to expect a precise definition of 'reasonable prices'. A useful relative measure of the reasonableness of food prices at any given time is the average fraction of consumer income required to purchase a nutritionally adequate diet. The interpretation of such a number is based on comparisons with the historical record, and with similar figures for other nations. From the standpoint of consumers, the most reasonable food prices will normally be low food prices. In the interests of clarity, therefore, the words 'low' or 'lower' will be substituted for 'reasonable' in discussing the contribution made to national goals by progress toward this agricultural goal.

For a given money income, the lower the level of money prices of consumer goods, the higher is the level of real income. Since food purchases account for about 25 percent of total spending on consumption, there is a strong positive relationship between lower food prices and the national goal of Rising Real Income. This is indicated by the double-plus (++) entry in the upper-left cell of Matrix 1. For similar reasons, stable food prices contribute strongly to the national goal of Stability of Prices and Incomes.

A more subtle positive relationship exists between lower food prices and Equitable Distribution of Income. Since lower income groups spend a higher proportion of their incomes on food, the benefits of food price decreases accrue to those groups in a proportion which is higher than their share of total money income. However, there is also an indirect negative relationship with this goal arising from the fact that a principal route to lower consumer food prices is through more efficient production. One way to increase productive efficiency is by shifting production to those regions possessing comparative advantage. In Canada, such shifts are likely to aggravate existing inter-regional income disparities. In a similar fashion, relocations of this type could run counter to the goal of Balanced Economic Development to the extent that they shifted production and population away from relatively disadvantaged areas.

Another negative relationship could arise between this goal and the national goal of Peaceful and Responsible International Relations, again depending on the means employed to achieve it. For example, a variable import tariff designed to achieve stability in the domestic price of imported food could disturb Canada's trading partners and even result in retaliation.

### 2.1.2 Adequate, Dependable Food Supply

'Adequate' is taken to mean 'being sufficient to meet Canadian domestic demand'. Because the physical volumes of consumption (of food in general, of major food categories, and even of some important individual food commodities) are relatively insensitive to price changes, it is reasonable to talk about the quantity of domestic demand for certain foods without qualifying all such statements by reference to the appropriate price level. Domestic demand may be met either by increasing domestic production or by increasing imports. 'Dependable supply' is taken to mean stability in the annual quantity offered on the Canadian domestic market from the customary principal sources of a given food whether these be domestic, foreign, or both.

Reference has already been made to the fact that changes in supply, either in the world market or in the Canadian market (if and when it is effectively isolated), are the main cause of sharp fluctuations in food prices. Assured dependable supplies will therefore exert a direct effect on price stability which, in turn, will be reflected in a more even flow of producer income.

For obvious reasons, domestic production is felt to be the most dependable source of supply to the home market. To the extent that dependability of supply is achieved by displacing imports and thereby increasing the relative importance of domestic output, this goal helps to achieve the national goal of Full Employment. Import substitution also implies greater diversification of production which is an important aspect of the national goal of Balanced Economic Development.

Dependability of supply can also be enhanced by establishing stable long-term import contracts. Such arrangements tend to contribute to the national goal of Peaceful and Responsible International Relations. This positive relationship could, however,, be partially or wholly offset by the negative effects, from the point of view of other nations, of trade restrictions applied to preserve and protect domestic suppliers.

### 2.1.3 High-Quality, Nutritious Food

This goal is concerned with ensuring that foods offered to the consumer be free of potentially harmful additives, pollutants or toxic substances. This concern extends to identifying the quality of food products in a consistent manner. However, it should not be interpreted as meaning that choices available to consumers ought to be in any way restricted, within the wide range of quality characteristics which pose no hazard to health.

In addition, the goal is concerned with encouraging a nutritious pattern of food consumption. This may be achieved through consumers being better informed about the nature of a nutritious diet and about the nutritive content of particular foods.

Progress towards this goal enhances the physical well-being of Canadians and contributes to the national goal of Improved Quality of Life.

## 2.2 PRODUCER-ORIENTED GOALS

### 2.2.1 Fair Level of Producer Returns

Pursuit of this goal involves optimising returns to the resources of labor, land and capital which are employed in agriculture. In some cases, this may require a shift of resources out of agricultural use into alternative employment in which their productive earnings would be higher. Achievement of the goal implies that per unit returns to the resources employed in agriculture will be raised to, and maintained at, levels which compare favorably with those received by similar resources employed in other important sectors of the economy.

In addition, this goal encompasses a concern that the full social value of primary agricultural production, as reflected in the market prices for final products, be passed back to the owners of the resources employed. That is, firstly, to ensure that the processing, distributing and retailing (PDR) sectors do not maintain super-normal profit margins through the exercise of monopolistic power; and secondly, to minimize the spread between farm-gate and retail prices by increasing the efficiency with which the PDR sectors perform their essential functions.

A 'fair' level of return does not mean a guaranteed rate of return to all producers or to all resources which may be in use at any given time. Such an interpretation would inevitably support inefficiency. Furthermore, its implementation would begin a circular process which would prove self-defeating.

This latter point can be clarified by considering the determinants of the market price for farm real estate. This price is largely determined within the industry, and represents a major portion of the total capital investment in agricultural production. Prices of land reflect buyers' perceptions of net productive returns to the land resource, expected future increases in the market value of the asset, and the psychic satisfaction of owning land. If farmers are somehow enabled to raise the productive returns (alone) to equivalence with a market rate of return on investment, then the other two factors will create an incentive to bid up the price of land, thereby forcing the rate of productive returns on land back down to its former level. This process would then be repeated in order to restore net rates of return to the level associated with the previous (lower) land costs.

Stable Returns to Producers is listed as a separate goal. Therefore, protecting the farmer against the adverse effect of pricing practices (such as 'dumping') which are seen as being of a temporary or intermittent nature,

are considered under that goal. In line with this distinction, the goal of Fair Returns actually means Fair Levels of Returns to Producers Over the Long Term.

When the full social value of agricultural products is reflected in prices at the farm gate, a rational allocation of resources in farming can be expected to occur. Such an allocation serves the goal of Rising Real Income by raising incomes to the owners of farming resources and/or (through the competitive process) by lowering consumer prices.

Comparisons of net returns to farming operations with average industrial wages<sup>3</sup> indicate that, in general, farmers are earning a relatively low rate of return on either (or, in some cases, both) their capital investment and their labor-time. This being the case, the movement to fair rates of return would imply somewhat fewer, but more highly paid resources in the agricultural sector, an adjustment which would help to achieve the national goal of Equitable Income Distribution.

The national goal of Harmonious Federal/Provincial Relations will also be fostered by the maintenance of fair returns to agricultural producers, particularly with respect to those provinces in which agriculture is relatively important.

#### 2.2.2 Stable Returns to Producers

As in the above interpretation of stable food prices, the emphasis is on short-term stability rather than the elimination of long-term trends. In the past, farm gate prices have fluctuated sharply. This has resulted in wide swings in net farm income, often reinforced by large year-to-year variation in physical yields. Occasionally, there is a close relationship between changes in Canadian output and changes in the Canadian prices of the product, but for many important commodities this relationship is overshadowed by the price effects of supply conditions on world markets.

Instability in farm prices and incomes introduces great uncertainty into the planning of agricultural investments. There is evidence that this uncertainty distorts the pattern of investment, resulting in the underutilization of capital in particular subsectors and a suboptimal rate of return to that capital. Reducing the degree of uncertainty would, therefore, imply better investment decisions accompanied by higher incomes to owners of resources employed in agriculture and/or lower prices to consumers of an expanded volume of output.

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<sup>3</sup> Returns to farming operations exclude income derived from off-farm employment. Details of this comparison are given in the subsection entitled "Assessing Progress in Achieving Instrumental Goals."

Since close to one in every four job holders is employed in an activity directly related to agriculture and the food system, more stable returns in agriculture would, by definition, contribute to the national goal of Stability of Prices and Incomes.

When pursued through such mechanisms as the Western Grain Stabilization Program, more stable returns to producers will also help to cushion the adverse regional impact of precipitous declines in net agricultural receipts, thereby contributing to the national goal of Balanced Economic Development.

While a degree of uncertainty can add zest to peoples' lives, the expectation of a reasonably stable income flow remains an important aspect of a desirable living environment. Encouraging stability in farmers' returns is therefore shown, in Matrix 1, as a positive element for an Improved Quality of Life.

Some of the methods which might be employed to reduce the instability of returns to domestic producers could have negative effects on the national goal of Peaceful and Responsible International Relations. Examples include the unilateral imposition of export subsidies and/or restrictions on imports.

#### 2.2.3 Reduced Economic Disparities in Agriculture

This goal refers to disparities between agriculture and other sectors (in terms of average income of the people engaged) as well as to disparities within the agricultural sector. The goal of a Fair Level of Producer Returns focuses on ensuring that the full social value of primary production be received by the owners of the productive inputs, whereas the emphasis of this goal is on income differences arising from disparities in the ownership of those productive resources (e.g., education, skills, land and capital).

Intersectoral disparities in the returns to human capital in agriculture may reflect lower average levels of education due to poorer schooling facilities traditionally available in rural areas, or to a custom in such areas of placing less importance on formal schooling. Intersectoral disparities may also arise from long-term structural changes in the economy which have eroded the competitive position of the agricultural industry through, for example, the tendency for higher incomes to disproportionately increase the demand for non-food items.<sup>4</sup> The full adjustment to such structural shifts takes place quite slowly because of rigidities in the system which impede resource mobility. For labor, such 'rigidities' include the age of farm operators, relocation costs, work preferences, social pressures, and the desire to make use of specialized skills. In the case of capital, they include the existence of significant amounts of sector-specific capital in the form of assets which are difficult to shift out of agriculture except through long-term depreciation.

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<sup>4</sup> Engel's law states that the larger a family's (or a nation's) income, the smaller will be the fraction spent on food.

Transfer payments to reduce income disparities, particularly when financed through a progressive taxation structure, tend to create disincentives to economic effort on the part of those being taxed and, perhaps to a lesser extent, on the part of the recipients. Such programs can thus have a negative impact on the national goal of Rising Real Income. Government programs to counteract inter-regional disparities through investment to create employment, may also exert a negative influence on this goal. This will occur when the selected investment project displaces an alternative project in another region, which could have yielded a higher rate of economic return.

Reducing economic disparities in agriculture will make a strong positive contribution to the national goal of a More Equitable Distribution of Income since the disadvantaged subsectors in agriculture represents a substantial fraction of all low-income earners in Canada. In a similar way, the creation of job opportunities in these agricultural subsectors will support the national goal of Full Employment.

There is a strong positive relationship between reduced economic disparities in agriculture and the national goal of Balanced Economic Development. This is because most of the methods adopted to reduce inter-regional disparities in agriculture, such as government job-stimulating investments, tend to temper the private market forces leading to increased concentration of population. They thereby assist in preserving the present level of population diffusion and, at the same time, in maintaining economic diversity and self-sufficiency at the regional level.

Provincial governments have demonstrated considerable sensitivity to the existence of economic disparities in rural areas. Thus, reduction of such disparities will be a factor in attaining Harmonious Federal/Provincial Relations. This will be especially true for the 'have-not' provinces where the most significant disparities are inter-regional, and for the strongly agricultural provinces where the disparities tend to be intersectoral.

## 2.3 BROADLY ORIENTED GOALS

### 2.3.1 Improved Quality of Rural Life

The meaning attached to the phrase 'quality of life' has been discussed in Subsection 1.2. In the context of a goal for agriculture, the emphasis is on the life-style of rural residents, those living on farms or in small rural communities.

Bettering the living conditions of farm and rural residents will help achieve the national goal of Balanced Economic Development by retarding or reversing the flow of net migration to the cities.

The positive relationship between an improved quality of rural life and the national goal of an Improved Quality of Life is almost tautological. It rests on an underlying assumption that the quality of life for society in general can (in principle) be increased by summing the separate indices of the quality of life for society's component groups. In other words, the notion that improving the quality of life for rural residents may actually reduce the level of satisfaction of urban dwellers (because they perceive an adverse relative shift in their position) is not considered to be significant.

### 2.3.2 Balanced Rural/Urban Population Distribution

This goal does not imply that there is any specific number which represents the ideal balance between rural residents and urban dwellers. Rather, the intent is either to preserve the existing rural/urban shares in the population or at least to slow down the rate of increase of the urban share. This is reflected in efforts to maintain existing levels of rural population. Since the rural/urban population varies considerably between provinces, a balanced national rural/urban population distribution must accommodate a fairly wide dispersion of such ratios, when measured at the regional level.

A net negative relationship is shown between this goal and the national goal of Rising Real Income. The negative sign was chosen despite the often cited social and economic costs of rapid urbanization (particularly in the largest cities) which would indicate a positive relationship. More than offsetting this impact is the evidence that the economic productivity of many resources, especially of labor and management, would be considerably higher if some of these resources were shifted from rural to urban locations, i.e. if an increase in total material income were society's only objective, then an even further rural-to-urban movement would probably be indicated.

Since balancing the population distribution is an integral part of efforts to achieve Balanced Economic Development, it follows that this national goal will be strongly reinforced by success in achieving the complementary goal for agriculture.

Depletion of the rural population will, in general, have a detrimental effect on the rural community. Furthermore, many studies have shown that rapid expansion of the largest urban centres typically brings in its wake sharp increases in problems of social maladjustment with attendant social and economic costs. It has even been suggested that the quality of the city dweller's life is enhanced if he has a populated countryside to visit from time to time. For these reasons, a strong positive relationship is shown between a balanced rural/urban population distribution and the national goal of an Improved Quality of Life.

Since individual provinces are interested in maintaining their relative weight in terms of population, progress towards this agricultural goal will meet with approval at the provincial level and may be expected to contribute to the national goal of Harmonious Federal/Provincial Relations. This will be particularly true for those provinces with a higher than average rural population.

### 2.3.3 Conservation of the Resource Base

This goal encompasses three main areas of concern, the first of which is resource maintenance. This involves protection against irreversible or costly-to-reverse changes in the productivity of resources induced by short-term price fluctuations which inadequately reflect long-term market trends. An obvious example in the agricultural context is that of farmland being diverted to other uses during a period of temporarily depressed prices. Such land is often converted to residential, commercial or industrial uses and thereby modified to an extent that it would be prohibitively costly to ever restore it to agricultural use.

A second area of concern involves externalities. These are the spill-over effects of certain types of resource use by private economic agents. The most relevant examples are cases of pollution of soil, water or air arising from the activities of commercial agriculture.

The third main area of concern relates to the needs of future generations for the various non-renewable resources. The problem arises from the contention that the appropriate time-planning horizon for society as a whole is longer than for each of its individual members. In other words, society's rate of time discount is lower than that implied by current market rates. This point of view is not universally accepted. In agriculture, dependence on non-renewable resources is mainly in the area of fuel sources and some components of fertilizers. The third concern is thus with the long-run rate of exploitation of these kinds of non-renewable resources.

There is no simple one-way relationship between conservation of the resource base and the national goal of Rising Real Income. To begin with, there is the question as to how society should compare an increase in real income for a future generation vis-a-vis an increase in real income during the next few years. Establishing this relationship also requires some method of separating the costs of pollution into those which reduce the nation's real income as distinct from those which primarily affect psychic income and reduce the quality of life. One useful way to approach the latter issue is to try to determine the extent to which conservation expenditures can be considered as expenditures on consumption (e.g., the preservation of endangered species of negligible economic value) and to what extent they qualify as investments. Although the issue is debatable, it seems reasonable to conclude that enlightened conservation policies will contribute in a positive way to growth in real income.

Efforts to conserve the resource base will have little impact on year-to-year fluctuations in prices or incomes. Over decades, however, the level of agricultural output and receipts will be protected from serious decline only if the nation's natural resources are wisely utilized and guarded against environmental degradation.

There is a much stronger and more direct positive relationship between conservation of the resource base and the national goal of Balanced Economic Development. Rationing, over time, the depletion of non-renewable resources, and assuring the timely regeneration of renewable resources, both serve the needs of long-run balanced development. Furthermore, a major concern of anti-pollution efforts is that any one type of economic activity not be permitted to degrade the environment for other types of economic activity. Hence, such efforts are supportive of balanced development in the sense of expanding the diversity of economic activities.

Similarly, conservation and pollution-control efforts directed at preserving or improving the living environment clearly make an important contribution to the national goal of Improved Quality of Life.

#### 2.3.4 Fulfillment of International Responsibilities in Food and Agriculture

This is another broad goal which defies precise definition. However, it appears to encompass two principal responsibilities. First, a national obligation to alleviate temporary but critical food shortages in other countries, mainly resulting from natural disasters. Second, to help less-developed countries upgrade their agricultural sectors and food systems as an essential part of their overall economic development. These obligations may be met unilaterally or in cooperation with other nations and with international bodies. In either case, the ultimate aim is perceived to be a narrowing of the present wide differences in global standards of living.

The fact that contributions to international aid are so often expressed as percentages of GNP, makes it plain that there is some opportunity cost or sacrifice in terms of Rising Real Income from the standpoint of the donor country.

While it is obvious that effective programs of international aid will contribute to improving the quality of life in the recipient nations, it may be less clear why Matrix 1 shows a positive impact on this goal within Canada. The reasoning is that a nation's citizens wish to perceive themselves as being generous to those in need and concerned about the plight of people in other parts of the world. Actions which confirm this image will therefore add to the quality of their life experience.

The strong positive relationship between this goal and the national goal of Peaceful and Responsible International Relations needs no further elaboration.

### A.3 ACHIEVING THE AGRICULTURAL GOALS

Sections A.1 and A.2 described the links between Canada's national goals and ten comprehensive goals for the agricultural sector. Although they are specific to agriculture and the food system, these ten broad goals are nevertheless worded in so general a fashion as to make it very difficult to relate them directly to any particular set of operational programs. Even if such relationships could be established, the large number of programs and policies relevant to each of these broad goals would make it virtually impossible to sort out their net effects. It was therefore desirable to define a larger and more specific set of 'instrumental' goals which contribute to achieving the broad goals of the agricultural sector but which are narrow enough to permit them to be identified with particular types of operational programs and policies. These policies and programs are the instruments which are embodied in legislation, in the mandates of government departments and agencies concerned with agriculture, and in the annual estimates of federal expenditures. As indicated in Figure 1, they are the means (instruments) for achieving the instrumental goals. The instrumental goals have therefore been worded so that one or more of them can readily be associated with the stated aims and objects of specific government programs and/or policies.

The goals for agriculture which formed the rows of Matrix 1 have been transposed to form the columns of Matrix 2. Just as the goals for agriculture (rows) of Matrix 1 contributed to the attainment of the national goals, so the instrumental goals (rows) of Matrix 2 help to achieve the broader goals at the top of the columns. Also, as in Matrix 1, a negative entry identifies unintended secondary impacts which may be significant. In the following subsections, the instrumental goals are grouped into three general areas (Production and Marketing, Food Quality and Security, Rural Development and Income Security) and the rationale underlying the cell entries in Matrix 2 is explained.

#### 3.1 PRODUCTION AND MARKETING GOALS

##### 3.1.1 Efficient Production and

##### 3.1.2 Efficient Marketing

Greater efficiency implies more output per unit of input. For producers of primary agricultural products, this normally results in higher profits. The higher returns then tend to attract more resources into the industry. The employment of these additional (and/or more productive) factors of production increases total output and (unless demand is perfectly elastic) exerts downward pressure on prices. Thus, in industries with a competitive structure, gains from greater efficiency in production will normally be shared between consumers of the product and owners of the resources employed in the industry. The consumer's share of such efficiency gains will be higher the more inelastic is the demand for the good being produced.

AGRICULTURAL GOALS

Matrix 2

(Contribute to National Goals)

INSTRUMENTAL GOALS (Means to achieve Agricultural Goals)		CONSUMER-ORIENTED				PRODUCER-ORIENTED				BROADLY-ORIENTED	
		Reasonable, Stable Food Prices	Adequate, Dependable Food Supply	High Quality, Nutritious Food	Fair Level of Producer Returns	Stable Returns to Producers	Reduced Economic Disparities	Improved Quality of Rural Life	Balanced Rural/Urban Population	Conservation of the Base Resources	Fulfillment of International Responsibilities
PRODUCTION & MARKETING	Efficient Production	++	+	+	+	+	+				
Efficient Marketing		++	+	+							
Effective Resource Management		+	+		+	+	+	-		++	
Market Development		+			++	+			+		
Effective Food & Technical Aid					+	+					++
FOOD QUALITY & SECURITY	Nutritious Food for All Canadians	++		+							
Informed Food Consumers		+		++							
High Commodity Standards				++	+						
Diversification of Production		-		++				+			
Security of Imported Supplies		+	-	++							+
RURAL DEVELOPMENT & INCOME SECURITY	Increased Producer Bargaining Power		+			++	+	+	+		
Stability of Producer Returns		+	-	++		+	++			+	-
Viable Farm Units						+		+	++		
Rural Community Development		+				+		+	++		

Cell entries reflect judgements about the extent to which achievement of broad goals is influenced by progress towards the related instrumental goals: minus sign (negative impact); blank (negligible); plus sign (positive); double plus (large positive). Plus and minus entries in the same cell indicate that the Instrumental Goal can be achieved in several ways, one or more of which can have a negative impact on the relevant Agricultural Goal.

Applied to the marketing sector, this means that efficiency gains are divided between greater net returns to marketing enterprises and lower gross marketing margins, the latter bringing benefits to both consumers and producers. There is, therefore, a strong positive relationship linking both of these instrumental goals with the broad agricultural goals of Reasonable, Stable Food Prices and Fair Level of Producer Returns.

Greater efficiency in production and in marketing also contributes to the broad goal of an Adequate, Dependable Food Supply. Efficiency in production enables domestic producers to successfully compete with foreign supplies, while efficiency in marketing minimizes the extent to which supplies are interrupted by spoilage or by bottlenecks in the system of distribution.

While there are numerous areas in which productive efficiency can be enhanced, one which deserves special mention is the control of plant and animal diseases. When undertaken at appropriate levels, expenditures on plant and animal disease control result in cost savings which exceed total program outlays. These savings are shared between producers and consumers, with the long-run benefits normally being reflected in lower consumer prices. Consumers also benefit from the higher quality, more nutritious food which can be made available when plant and animal diseases are eradicated or confined to low levels of incidence. Another important aspect of disease control relates to those pests and diseases which have epidemic potential. In these cases, uncontrolled proliferation can result in widespread destruction of the afflicted species. In addition to minimizing the direct losses, effective control of these types of pests and diseases reduces unexpected fluctuations in output and thus, in prices. In this way, it makes a positive contribution to the goals of a Dependable Food Supply and of Stable Food Prices, and exerts an even more direct effect on the goal of Stable Returns to Producers.

### 3.1.3 Effective Resource Management

To the extent that impediments to mobility of resources between sectors in response to changing opportunities are removed and more rapid adjustment of employment takes place, the average level of returns to resources remaining in agriculture will rise. In this way, the adjustment process will assist in ensuring a Fair Level of Producer Returns. Enhanced mobility will also reduce disparities between returns in agriculture and those in other sectors, as well as disparities between subsectors within agriculture.

A rapid adjustment of resources will have both negative and positive effects on the quality of rural life. Resulting decreases in total rural population are likely to reduce the variety and accessibility of goods and services provided by local firms and communities, thus making rural life less attractive for those who remain. On the other hand, the reduction of under-employment and insecurity will enhance the attractiveness of the rural environment.

Any net rural depopulation as a result of increased labour mobility would clearly be detrimental from the point of view of maintaining a satisfactory balance in the rural-urban distribution of population.

Another aspect of effective resource management is that of public investments in physical measures to upgrade and expand the existing agricultural land base, along with incentives and restrictions designed to protect and preserve that land base against shortsighted transfers to non-agricultural development. These activities tend to increase output levels over the long run, and thereby contribute to the goals of providing consumers with an adequate and dependable food supply at reasonable prices. The effect on returns to producers cannot be specified in the absence of detailed information about the magnitude and intent of the various policies adopted. Looking only at the output-increasing effects and the elimination of potentially higher bids for the producer's land asset, the impacts would appear to be negative. However, investments in land improvements (e.g., drainage projects) will have a beneficial effect on producer's costs. Also, conservation policies may be implemented by providing tax abatements to agricultural uses, thus increasing the farmer's net revenues.

A more productive land base will exert a positive effect on the Quality of Rural Life as well as tending to retard the depopulation of the countryside. However, the most significant impact of policies and programs to protect and improve fertile farmland will be in contributing to Conservation of the National Resource Base.

### 3.1.4 Market Development

There are, in theory, numerous ways in which producer returns could be maintained at 'fair' levels despite steady decreases in export sales. Nevertheless, as a practical matter, it will continue to be more feasible to maintain satisfactory levels of producer returns in Canadian agriculture if the nation can expand its share of a growing export market for agricultural output. Other things being equal, achievement of this instrumental goal will therefore make a strong positive contribution to the broader goal of a Fair Level of Producer Returns.

The stability of producer returns will also be enhanced by the expansion of export markets when such market development involves an increase in the number of nations purchasing Canadian products and/or in the extent to which trade arrangements are made on a long-term basis. A more diversified clientele increases the likelihood that reduced purchases resulting from unfavourable circumstances in one or two customer countries will be offset by increased sales to other nations experiencing more buoyant conditions. Contractual arrangements over fairly long periods not only make it easier to plan production, but also provide a floor below which export volumes should not fall.

The expansion of commercial exports implies the expansion of total output and, in turn, an increase in the level of activity both in primary agriculture and in the supporting service industries. There will, therefore, be a positive effect on the goal of maintaining a Balanced Rural/Urban Population. On the other hand, increased levels of output will tend to exert additional pressure on the resource base with a corresponding negative impact on the goal of Conservation.

An aggressive program of market development will encourage increased domestic processing and import substitution as well as expanded exports. The growth of a diversified processing sector will contribute to the goal of an Adequate, Dependable Food Supply since it eliminates the possibility that domestic consumers will be deprived of the processed products as a result of physical bottlenecks in foreign trade channels and/or institutional problems such as embargoes or currency constraints.

There is also a link with the goal of Stable Returns to Producers which can come about in at least two ways. First, a vigorous domestic processing sector will almost certainly enter into stable purchasing relationships with local producers, often involving fixed-price contracts for future delivery which remove much of the uncertainty from production planning. Second, a local processing plant represents an alternative income source from which producers often derive off-season or supplementary income.

It is not certain that this instrumental goal would help to attain a Balanced Rural/Urban Population. While certain types of processing are clearly materials-oriented in their location decisions, others are more market-oriented, tending to locate in centres with existing high densities of population.

### 3.1.5 Effective Food and Technical Aid

This instrumental goal is positively linked with the broad goal of a Fair Level of Producer Returns. By transforming what would otherwise simply be a biological need for food into an effective demand, food aid programs tend to support the market for agricultural products. To the extent that the mix of products supplied as food aid is designed to help offset relative weakness in the markets for particular products (as e.g. the recent emphasis on skim milk powder as a component of aid shipments) aid programs also help to ensure Stable Returns to Producers.

The strongest impact of food and technical aid programs is their important role in the fulfillment of Canada's International Responsibilities. This is especially true of soundly conceived and executed projects of technical assistance which have the potential to raise the productive capacity of the recipient nations.

## 3.2 FOOD QUALITY AND SECURITY GOALS

### 3.2.1 Nutritious Food for All Canadians

As an instrumental goal for agriculture, this objective is mainly sought through programs which reduce the cost, to low-income consumers, of certain essential foodstuffs. Other things being equal, such programs will have a strong positive impact on the goal of Reasonable Food Prices for Consumers. By encouraging the consumption of a more balanced diet, such programs also help to achieve the goal of High-Quality and Nutritious food. Finally, by increasing effective demand for certain basic foods, they assist in maintaining a Fair Level of Producer Returns.

### 3.2.2 Informed Food Consumers

Consumers who are fully informed with respect to both the prices and the nutritive content of the range of available food, can be expected to stretch their food dollars by making better decisions in food purchasing and preparation. As a result, there will be a positive effect on the goal of Reasonable Food Prices, in terms of the fraction of consumer income spent on food. The strongest link, however, will be with the broad goal of High-Quality and Nutritious Food, as informed consumers adopt a more nutritious diet.

### 3.2.3 High Commodity Standards

The major positive impact of this instrumental goal will be on the goal of High-Quality, Nutritious Food and, in particular, on the attainment of a more nutritious diet. Since consistent adherence to quality standards implies fewer and smaller differences between quality specified and quality obtained, consumers' actual consumption will more closely approach their intended consumption.

A more indirect link exists with the goal of a Fair Level of Producer Returns. In the absence of consistently enforced quality standards, producer prices tend to reflect the average of high- and low-quality output. The producers of high-quality products are thus unfairly deprived of the appropriate return for their product and the producers of low-quality products tends to be subsidized.

### 3.2.4 Diversification of Production

Programs designed with this goal in mind seek to support the domestic production of certain agricultural products which, on the basis of financial considerations alone, would be imported from other nations. Choosing to obtain a proportion of Canada's requirements of these commodities from higher-cost domestic sources has a negative influence on the attainment of lower consumer food prices.

On the other hand, there is a strong positive effect on the goal of maintaining an Adequate, Dependable Food Supply, especially if one considers the mounting pressure of population on the food-producing capabilities of those nations on which Canada would have to rely for her total requirements of certain foods. In this context, it is regrettably necessary to take into account the possibility of interruptions in foreign supplies by reason of future military conflicts.

A reasonably broad diversification of production will tend to reduce instability in aggregate producer returns, since weather disasters and market glutts rarely affect all crops with equal intensity at the same time. This is also true at the level of the individual farm enterprise and has motivated a number of programs designed to encourage greater diversification in some traditionally 'one-crop' areas.

Finally, there will be a positive effect on Conservation of the Resource Base. This is well illustrated in the Niagara fruit belt region, where the free play of market forces would result in the conversion of much of the fruitland into urban-related uses. Many of these alternative uses would effectively eliminate the possibility of restoring the land for productive agriculture in the future.

### 3.2.5 Security of Imported Supplies

Implementation of this instrumental goal is likely to take the form of government support of long-term bilateral commodity contracts. Obtaining a significant proportion of imports on this basis could affect the level and stability of consumer prices in opposite directions. The positive impact would be in reducing instability, since prices of these imports would be predictable over the life of the contracts. However, there would be a cost attached to this added stability and security in the form of foregone opportunities to take advantage of short-run price fluctuations. Negotiated long-run prices tend to be somewhat higher than the average price which would result from purchases timed to coincide with periods of weak demand. The net effect is indeterminate, as reflected by the entry of both plus and minus signs in the appropriate cell of Matrix 2.

Willingness on Canada's part to reach mutually satisfactory long-term commodity agreements with other countries will contribute to the broad goal of Fulfilling International Responsibilities. This will be especially true in cases where such agreements provide less developed nations with a more reliable market.

There is a direct and positive relationship between this instrumental goal and the broad goal of maintaining an Adequate, Dependable Food Supply.

### 3.3 RURAL DEVELOPMENT AND INCOME SECURITY GOALS

#### 3.3.1 Increased Producer Bargaining Power

This instrumental goal has, historically, been one of the major thrusts of Canadian farm organizations. Over the years, these organizations have emphasized the contrast between the relatively atomistic structure of primary production in agriculture and the increasingly oligopolistic character of the processing, distribution and retailing (PDR) sectors. In a more ideal world, the remedy for such a situation might be to re-structure the PDR sectors to conform to the competitive model. Since this is unlikely to happen, farm spokesmen have almost unanimously adopted the position that the only practical method of combatting the existence of market power in the PDR sectors is to enhance the bargaining position of primary producers. To the extent that this strategy succeeds, it will help to assure a Fair Level of Producer Returns.

By the same token, there will be a tendency for these higher producer prices to be passed on to consumers, as the market power possessed by the PDR sectors will certainly be exercised in setting selling prices as well as in negotiating for supplies. The appropriate cell in Matrix 2 therefore indicates a negative impact on the broad goal of Reasonable Food Prices.

Enhanced producer bargaining power through producer coordination need not, however, be a zero-sum game in which farmer gains are completely offset by consumer losses. This is because producer organization, by improving the planning process and by providing the facilities for orderly marketing of farm output, can exert a favourable impact upon both the efficiency of production and the stability of prices. These impacts, in turn, exert an indirect but positive effect on the goals of Reduced Economic Disparities in Agriculture and of an Improved Quality of Rural Life.

#### 3.3.2 Stability of Producer Returns

This instrumental goal can be pursued in numerous ways, each of which will exert a somewhat different influence on the attainment of broad goals. In general, the methods adopted tend to strengthen weak demand (e.g., support prices, purchase and storage programs) and/or lessen the magnitude of excess supply (e.g., variable import levies, domestic output constraints). These efforts to enhance stability are seldom completely symmetrical. That is, actions to augment supplies when demand is strong or to siphon off demand pressures which are pushing commodity prices up, are rarely pursued with exactly the same sense of urgency. For this reason, Matrix 2 shows that this instrumental goal has a positive effect on the Level of Producer Returns but has both positive and negative influences on the goal of Reasonable, Stable Food Prices. There is, almost by definition, a strong positive effect on the goal of Stable Returns to Producers, since these measures do reduce the range of price fluctuation by setting a 'floor' to downward movements without necessarily raising the 'ceiling'. It is probable, in fact, that

increased price stability will contribute to a more dependable domestic food supply and, in this way, reduce the incidence of sharp upward price fluctuations resulting from shortfalls in supply.

The appearance of both plus and minus entries in the cell relating to the Fulfillment of International Responsibilities reflects the fact that Canada's trading partners, while welcoming additional price stability, will object to those kinds of unilateral action which seek to cope with unplanned excess supplies by severe curtailment of imports from traditional foreign sources.

A particularly important class of programs aimed at helping to stabilize producer returns are those designed to reduce the impact of natural hazards. These include programs which assist producers to deal with weather variability or which operate to spread the risk of losses caused by a wide range of natural disasters.

There is some overlap between programs designed to increase productive efficiency and programs which assist the farmer to cope with natural hazards such as drought, frost, and wind erosion. In this context, one need only note that improved farm weather reports, tillage practices which minimize damage from drought, and other activities which operate to actually reduce output losses, will help to achieve reasonable consumer prices as well as fair returns to producers. By reducing the long-term average level of losses due to natural hazards, such programs will also increase the dependability of the nation's food supply.

The major impact of programs which spread the risk posed by natural hazards is on stability of producer returns. This is seen most clearly at the level of the individual farm enterprises, but the stabilizing effects do not end there, since aggregate returns are also evened out from year-to-year when regional or national disasters result in claims in excess of current premium income. In Canada, producer insurance programs are partly financed from public funds, and to that extent, they contribute to fair (i.e., higher) returns to producers.

### 3.3.3 Viable Farm Units

Programs under this heading reflect the conviction that family farms are essential to the maintenance of a satisfactory quality of rural life and to a reasonable rural/urban distribution of population. This conviction is coupled with the belief that, for most commodities, family farms are a relatively efficient way in which to organize production. However, it is felt that for reasons related to pecuniary (as distinct from technical) economies of scale, many family farms will be taken over by vertically integrated agribusiness corporations in the absence of deliberate governmental intervention on their behalf.

Programs directed toward this goal typically involve an investment of public funds in an upgrading of the resources employed in agriculture by enterprises defined as family farms. Another objective of such programs is to assist operators of non-viable small farms in the transition to retirement or alternative employment. Finally, government policy in this area seeks to create an institutional setting conducive to the transfer of the family unit from one generation to the next.

Expenditure of public funds in these ways has some positive effect on the level of producer returns. In addition, there is a tendency to ameliorate disparities in agriculture, both by expediting the adjustment process of non-viable units, and by narrowing the competitive differences between family farms and the (normally larger, better-financed) corporate farms.

To the extent that these programs are successful, their strongest impact will be their contribution to a more Balanced Rural/Urban Population and an Improved Quality of Rural Life. Achievement of the latter goal will come about largely through the increased independence, stability and security of owner-operators as contrasted with the hired (and often non-resident) labor which is employed by corporate farms.

### 3.3.4 Rural Community Development

Public investment in the development of rural communities can usefully be divided into two forms. The first encompasses a variety of investments in the economic infrastructure of the community and includes the sorts of encouragement to local secondary industries which are provided through the Department of Regional Economic Expansion. Assistance in upgrading transportation and storage facilities is another example of this first category of development. Since such investments increase the efficiency of the productive process, their benefits will be reflected in higher returns to producers and/or lower consumer prices.

The second category of development is that of investment in non-commercial facilities such as schools, hospitals and public recreational facilities. Such assistance should not be thought of only in terms of structures and equipment, since encouraging community interaction through sponsorship of organizations and activities (e.g., 4-H clubs and local fairs) may be even more important to the development of a socially desirable community.

Effective government programs in the first category will tend to reduce economic disparities between agriculture and other sectors of the economy, while efforts in both categories will contribute strongly to improving the quality of rural life and to lessening the incentives for rural people to migrate to larger centres of population.

## B. CURRENT POLICY INSTRUMENTS AND PROGRAMS

### B.1 THE APPROACH

Matrix 3 is, in many respects, analogous to the two matrices introduced in previous sections. Its column headings display the three groups of instrumental goals, and are identical to the rows of Matrix 2. The row headings of Matrix 3, however, list 12 readily identifiable categories of programs and/or policies which are the means through which instrumental goals are intended to be achieved. The principal distinction between Matrix 3 and the two earlier matrices is that in Matrix 3 the row headings each represent a collection of activities to which the government explicitly allocates resources. Thus, it now becomes possible to attach a consistent cardinal measure to these activities, either separately or in groups. That measure is the direct dollar cost to the taxpayers of carrying out the activity. Such a measure is useful as an indicator of relative effort, but is not reliable as an index of relative effectiveness, since resources could be expanded inefficiently, or in ways which conflict with, instead of complementing, other important objectives.

The plan of this section (B) is as follows. Subsection B.2 provides a detailed listing of specific programs, grouped according to the instrumental goal(s) to which they contribute and cross-referenced by the program categories which form the rows of Matrix 3. Table 1, which forms the core of this subsection, also identifies each separate program by its Canadex reference number, thus enabling the interested reader to access a storehouse of information about any program or activity in which he has a special interest.

Subsection B.3 describes the kinds of individual programs which are aggregated into the row headings (program categories) of Matrix 3 and cites some typical examples. As each category is introduced, the cell entries in its row are briefly explained, thereby establishing links with the instrumental goals whose attainment justifies the cost of the various activities. Table 2 displays these costs by program category as well as for important individual programs in each category. The expenditures are associated with the Federal Government department or agency administering the activity and are charted over time. Using the links identified in Matrix 3, shifts in the patterns of expenditure are highlighted in order to indicate changes of emphasis in the importance attached to certain instrumental goals.

Finally, the regulatory instruments listed in the latter half of Matrix 3 are described in subsection B.4. The cell entries of the Matrix are briefly explained but the relative importance of the regulatory instruments are not examined because there is no cardinal measure with which to compare activities.

### B.2 SOURCE REFERENCES FOR SPECIFIC PROGRAMS

Table 1 answers the question: "What specific programs and policies has the Federal Government adopted in order to achieve its instrumental goals in the

## MATRIX 3 INSTRUMENTAL GOALS

Table 1 SPECIFIC PROGRAM/POLICY INSTRUMENTS USED TO ACHIEVE INSTRUMENTAL GOALS (WITH SOURCE REFERENCE), CANADA, 1976

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	Type*
1. Production and Marketing			
1.1. Efficient Production	Record of Performance	F.1.8	e
	Animal Contagious Diseases Prevent, Control or Eradicate and Quarantine Programs)	F.2.3	r
	Animal Pathology Programs	F.2.4	e
	Farm Improvement Loans	F.3.1	e
	Farm Credit Corporation Lending Programs	F.3.2	e
	Farm Syndicates Credit Act	F.3.3	e
	Canfarm Data Systems	F.3.5	e
	New Crop Development Fund	F.4.15	e
	Seed Inspection and Enforcement	F.5.1	r
	Varietal Licensing	F.5.2	r
	Seed Grades and Standards	F.5.3	r
	Seed Pedigree Programs	F.5.4	r
	Seed Grower Authorized Establishments	F.5.5	r
	Seed Statistics	F.5.6	e
	Canadian Forage Seed Project	F.5.7	e
	Elite Seed Potato Certification	F.5.12	r

\*Expenditure type (e); Regulatory type (r).

Table 1 (Continued)

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	Type*
1.2 Efficient Marketing	Demand, Supply and Price Information - Feeds and Fertilizers	F.5.15	e
	Plant Quarantine	F.5.17	r
	Domestic Quarantine	F.5.18	r
	Pesticide Residue Compensation	F.5.22	e
	Records of Performance Programs - Livestock	F.6.1	e
	Sire Loan Program	F.6.2	e
	Poultry Improvement Program	F.6.9	e
	Agriculture Outlook	F.7.22	e
	Agricultural Production Research	F.8.1	e
	Food Systems Coordination	F.9.1	e
	Seasonal Worker Program	F.10.1	e
	Canada Farm Labour Pool Program	F.10.2	e
	Agriculture for Young Canadians	F.10.3	e
1.3 Efficient Production	Federal Business Development Bank	F.3.6	e
	Rapeseed Utilization Assistance Program	F.4.13	e
	Fruit and Vegetable Cold Storage Program	F.5.11	e
	Export Certification	F.5.19	r

\*Expenditure type (e); Regulatory type (r).

Table 1 (Continued)

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	*Type
1.3 Effective Resource Management	Ship Inspection	F.5.20	r
	Bonding of Livestock Dealers, Commission Merchants and Order Buyers	F.6.7	r
	Processed Fruit Products- (Domestic and Export)	F.7.23	e
	Food Systems Coordination	F.9.1	e
	Small Farm Development Program	F.3.4	e
	Agricultural and Rural Development Act	F.3.7	e
	Prairie Farm Rehabilitation Administration	F.3.8	e
	National Feed Grains Policy	F.4.14	e
	Food Systems Coordination	F.9.1	e
	Canadian Manpower Adjustment Program	F.10.4	e
1.4 Market Development	Manpower Mobility	F.10.5	e
	Export Assistance - Dairy	F.1.5	e
	Tariff Policy	F.1.6	r
	Grain Freight Rates	F.4.5	r
	Canadian Wheat Board Act	F.4.7	r
	Dairy Subsidy Payments	F.1.2	e
	Target Support Price - Dairy	F.1.3	e,r
	Import and Export Control- Butter and Cheese	F.1.7	r
	Rapeseed Utilization Assistance Program	F.4.13	e

\*Expenditure type (e); Regulatory type (r)

Table 1 (Continued)

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	*Type
	Canadian International Grain Institute Market Development Program	F.4.8	e
	Grains Export Credit	F.4.9	e
	Exporters Financial Facilities	F.4.10	e
	Grain and Oilseed Marketing Incentives	F.4.11	e
	Grain Tariffs	F.4.12	r
	International Trade Agreements	F.4.16	r
	Trade Promotion	F.4.17	e
	Showcase Herds	F.6.10	e
	Trade Arrangements	F.7.1	e,r
	Market Information - Foreign	F.7.2	e
	International Trade - Agricultural Products	F.7.3	e,r
	Food and Agricultural Organizations	F.7.4	e,r
	Market Research - Foreign	F.7.5	e
	Export Trade Promotion - Trade Commission Service	F.7.6	e
	Promotional Projects Program	F.7.7	e
	Program for Export Market Development	F.7.8	e
	Incentive for Participation in Capital Projects Abroad	F.7.8.1	e
	Market Identification and Market Adjustment	F.7.8.2	e

\*Expenditure type (e); Regulatory type (r).

Table 1 (Continued)

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	*Type
	Incentive for Participation in Trade Fairs Outside Canada	F.7.8.3	e
	Incoming Foreign Buyers	F.7.9	e
	Export Consortium Assistance	F.7.10	e
	Agricultural and Food Products Market Development Assistance Program	F.7.13	e
	Domestic Agricultural Market Development	F.7.15	e
	Market Development - Agricultural Products	F.7.16	e
	Agricultural Markets Information	F.7.24	e
	External Trade Statistics	F.7.25	e
1.5 Effective Food and Technical Aid	Food and Agricultural Organization	F.7.4	e,r
2. Food Quality and Security			
2.1 Nutritious Food for All Canadians	Grading and Inspection - Dairy	F.1.9	r
	Meat Inspection	F.2.1	r
	Intra-Provincial Meat Inspection	F.2.2	r
	Two-Price Wheat Policy	F.4.2	e,r
	Hatchery Inspection	F.6.8	r
	Food Systems Coordination	F.9.1	e
2.2 Informed Food Consumers	Livestock Breeding Agricultural Exhibition Loans	F.6.11	e

\*Expenditure type (e); Regulatory type (r).

Table 1 (Continued)

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	*Type
2.3 High Commodity Standards	Exhibition Contributions	F.6.12	e
	Agricultural Museum Contributions	F.6.13	e
	Freight Assistance on Livestock to Royal Winter Fair	F.6.14	e
	Food Systems Coordination	F.9.1	e
	Grading and Inspection - Dairy	F.1.9	r
	Meat Inspection	F.2.1	r
	Intra-Provincial Meat Inspection	F.2.2	r
	Canada Grain Act	F.4.6	r
	Seed Inspection and Enforcement	F.5.1	r
	Varietal Licensing	F.5.2	r
	Seed Grades & Standards	F.5.3	r
	Seed Pedigreeing Program	F.5.4	r
	Seed Grower Authorized Establishment	F.5.5	r
	Hay and Straw Grading	F.5.8	r
	Binder Twine	F.5.9	r
	Grading and Inspection Programs - Fruit and Vegetable	F.5.10	r
	Elite Seed Potatoes Certification	F.5.12	r
	Feed Inspection and Enforcement	F.5.13	r
	Fertilizer Inspection and Enforcement	F.5.14	r

\*Expenditure type (e); Regulatory type (r).

Table 1 (Continued)

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	*Type
2.4 Diversification of Production	Pest Control Products Regulation	F.5.16	r
	Livestock Pedigree Act	F.6.3	r
	Grading & Inspection Program	F.6.4	r
	Registration of Premises	F.6.5	r
	Food System Coordination	F.9.1	e
	Agricultural & Rural Development Act	F.3.7	e
	National Feed Grains Policy	F.4.14	e
	New Crop Development Fund	F.4.15	e
	Canadian Forage Seed Project	F.5.7	e
	Sire Loan Program	F.6.2	e
2.5 Security of Imported Supplies	Canadian Livestock Feed Board	F.6.17	r
	Atlantic Freight Assistance Program	F.7.20	e,r
	Agriculture Outlook	F.7.22	e
	International Trade Agreements	F.4.16	r
3. Rural Development and Agricultural Income Security	Food & Agricultural Organization	F.7.4	e,r
	Canadian Wheat Board Act	F.4.7	r
	Canadian Livestock Feed Board	F.6.17	r
	Agricultural Products Marketing Act	F.7.17	r
	Agricultural Cooperative Marketing Act	F.7.18	r

\*Expenditure type (e); Regulatory type (r).

Table 1 (Continued)

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	*Type
	Farm Products Marketing Agencies Act	F.7.19	r
3.2 Stability of Producer Returns	Offer to Purchase Dairy Support	F.1.1	e
	Direct Subsidy Payments - Dairy	F.1.2	e
	Target Support Price - Dairy	F.1.3	e,r
	Market Sharing - Dairy	F.1.4	r
	Tariff Policy-Butter and Cheese	F.1.6	r
	Import and Export Control- Butter and Cheese	F.1.7	r
	Agricultural Stabilization Act	F.3.9	
	Price Support	F.3.10	e,r
	Crop Insurance	F.3.11	e
	Grain Price Stabilization	F.4.1	e,r
3.3 Viable Farm Units	Two-Price Wheat Policy	F.4.2	e,r
	Compensatory Payments - Animal Disease	F.5.21	e
	Farm Credit Corporation Lending Program	F.3.2	e
	Small Farm Development Program	F.3.4	e
	CANFARM Data System	F.3.5	e
	Agricultural & Rural Development Act	F.3.7	e
	Prairie Farm Rehabilitation Administration	F.3.8	e

\*Expenditure type (e); Regulatory type (r).

Table 1 (Concluded)

Instrumental Goal	Specific Policy/Program Instrument	Canadex Code	*Type
3.4 Rural Community Development	Agricultural Stabilization Act	F.3.9	e,r
	Price Support	F.3.10	e,r
	Crop Insurance	F.3.11	e
	Western Grain Stabilization Act	F.4.1.1	e
	Grain Price Stabilization	F.4.1	e
	Prairie Grain Advance Payment Act	F.4.3	e
	Initial Payments	F.4.4	e
	Agricultural Products Marketing Act	F.7.17	r
	Agricultural Cooperative Marketing Act	F.7.18	r
	Farm Products Marketing Agencies Act	F.7.19	r
3.5 Rural Economic Development	Agricultural & Rural Development Act	F.3.7	e
	Prairie Farm Rehabilitation Administration	F.3.8	e
	Livestock Breeding Agricultural Exhibition Loans	F.6.11	e
	Exhibition Contributions	F.6.12	e
	Agricultural Museum Contribution	F.6.13	e
	Freight Assistance on Livestock to Royal Winter Fair	F.6.14	e
	4-H Club Assistance	F.6.15	e
	Grants to Agricultural Organizations	F.6.16	e

\*Expenditure type (e); Regulatory type (r).

three areas shown at the top of the columns in Matrix 3?" In addition to listing these policy/program 'instruments', the table shows a computer retrieval code number opposite each program title. This allows any interested reader to access detailed information about that particular program from the Canadex data bank. The information available on a Canadex printout includes a statement of the objective of the program or policy; the legal authority under which the program is operated or the policy enforced; the criteria for eligibility (where relevant); a description of the operations and/or scope of the program; and gives the name of the responsible government unit. Where possible, the latter piece of information includes the name and phone number of a contact person.

In constructing Table 1, programs were classified according to their major thrust in terms of the set of instrumental goals. Nevertheless, it will be seen that certain policies and programs could not reasonably be linked to only one goal. An example is the CANFARM data system (Code F.3.5) which is shown to contribute to Efficient Program (Goal 1.1) and also to maintaining Viable Farm Units (Goal 3.3). Another example is the two-price wheat policy (Code F.4.2) which makes a substantial contribution to the provision of Nutritious Food for all Canadians (Goal 2.1), especially in times of strong international demand for wheat. At the same time, this policy clearly enhances the Stability of Producer Returns (Goal 3.2).

### B.3 SHIFTS AND TRENDS IN PROGRAM EXPENDITURES

In the preceding subsection, the various programs and policies were classified according to the nature of their objectives, that is, they were linked to the instrumental goals forming the columns of Matrix 3. In order to complete the picture, Table 2 groups these programs and policies on a functional basis, and provides information on the amounts of public funds which have been allocated to them over the past decade. Table 2 shows how much money was spent on eleven different types of program/policy activity, along with a residual activity entitled Administration. Between them, these twelve activities account for the entire budget of Agriculture Canada, together with a substantial portion of the budgets of several other Federal Departments whose activities also contribute to achieving the goals of Canadian agriculture.

The following paragraphs deal in turn with each of these twelve categories of government activity, emphasizing certain items of expenditure, and interpreting the cell entries linking the rows and columns of Matrix 3.

#### **3.1 DIRECT PAYMENT THROUGH COMMODITY PROGRAMS**

This category of programs is not only the largest in terms of direct federal expenditures, it is also an area in which relative expenditures have risen sharply in recent years. Roughly one-third of all federal expenditures on agriculture fall into this category, and about two-thirds of this spending is on one program, the milk subsidy administered by the Agricultural Stabilization Board (ASB). The two-price wheat program and the various commodity support payments by the ASB (mainly for horticultural products) account for most of the remainder.

Table 2 NET EXPENDITURES BY FEDERAL GOVERNMENT FOR SPECIFIC POLICY/PROGRAM, CANADA, 1965/66 AND 1970/71 TO 1975/76

	65/66	70/71	71/72	72/73	73/74	74/75	75/76
- 1000 -							
1. Direct Payment through Commodity Programs							
- Direct subsidy on milk (Ag.)	19,210	125,000	109,000	107,400	143,400	251,100	275,000
- Deficiency payments (Ag.)	39,407	1,470	12,988	11,184	97	46,474	25,989
- Price support - Agricultural Products Board (Ag.)	1,619	398	520	419	5	98	415
- Quality premium on hog and lamb carcasses (Ag.)	8,650	1,379	N.A.	N.A.	N.A.	N.A.	N.A.
- Premium on high quality cheese (Ag.)	1,505	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
- Premium on fluid milk and powder (Ag.)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	14,453
- Subsidies on fluid milk and powder (Ag.)	57,588	N.A.	5,678	N.A.	N.A.	N.A.	N.A.
- Lower Inventory for tomorrow (Ag.)	N.A.	N.A.	9,807	15,619	16,770	14,944	N.A.
- Grassland Incentive Payments (Ag.)	N.A.	N.A.	N.A.	63,173	69,386	81,230	188,698
- Two-price wheat (IT&C)							
Sub-Total	70,391	185,835	137,993	197,795	281,132	468,467	504,555
2. Direct Payment through Social Programs							
- Exhibition contributions (Ag.)	919	1,342	1,359	1,378	1,405	1,411	1,470
- Agricultural Museum contributions (Ag.)	6	21	24	24	24	24	30
- Federated Womens' Institutes of Canada (Ag.)	10	10	10	10	10	10	10
- 4-H Club assistance (Ag.)	160	191	193	198	208	196	208
- Small Farm Development adjustment (Ag.)	N.A.	N.A.	N.A.	638	6,102	8,653	7,318
+ Farm Labour Pool (M&I)	N.A.	N.A.	N.A.	N.A.	N.A.	1,489	3,462
- Agriculture for Young Canadians (M&I)	N.A.	N.A.	N.A.	N.A.	N.A.	50	N.A.
Sub-Total	1,095	1,564	1,586	2,248	7,749	11,833	12,498
3. Crop Insurance							
- Contributions to provinces - Crop Insurance Act (Ag.)	631	2,898	3,158	4,144	15,182	31,140	48,276
- Contribution to province of Quebec (Ag.)	N.A.	920	877	1,070	1,473	96	N.A.
Sub-Total	631	3,818	4,035	5,214	16,655	31,236	48,276
4. Assistance in Producer Financing							
+ Farm Credit Corporation Net Loss (Ag.)	1,105	8,603	8,885	8,446	6,808	4,716	3,514
- Grants to provinces in accordance with terms and conditions	9,751	N.A.	N.A.	12,250	2,021	795	1,404
- grants to provinces by Minister of Agriculture (Ag.)	185*	N.A.	N.A.	N.A.	N.A.	13	1
- Pesticide Residue Compensation (Ag.)	207	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
- Cheese Improvement Act (Ag.)	N.A.	63	21	10	8	42	N.A.
- Prairie Grain Provisional Payments (IT&C)	669**	11,614	3,513	1,036	1,645	3,058	1,011
- Prairie Grain Advance Payments (IT&C)	N.A.	18,295	11,210	3,870	N.A.	N.A.	N.A.
- Deficit Pool Accounts (IT&C)	N.A.	N.A.	N.A.	N.A.	N.A.	74	N.A.
- Deletion from the accounts of advances made to Saskatchewan to provide seed grain loans to farmers (Fin.)							
Sub-Total	11,912	38,575	23,629	25,612	10,482	8,698	5,930

	65/66	70/71	71/72	72/73	73/74	74/75	75/76
<b>5. Storage and/or Freight Assistance</b>							
- Canadian Livestock Feed Board (Ag.)	N.A.	20,773	20,563	21,381	22,737	21,921	20,739
- Freight or livestock shipment to Royal Winter Fair (Ag.)	1,38	46	63	61	40	28	65
- Canadian Government elevator operations (Ag.)	1,634	2,478	3,132	3,671	4,050	6,357	8,126
- Contributions towards the cost of transportation of fodder and Silage (Ag.)	278	N.A.	N.A.	580	820	944	N.A.
- Contributions to producer groups towards the cost of construction of storage (Ag.)	50	N.A.	N.A.	N.A.	367	1,218	1,292
- Payments on temporary wheat reserves (TSC)	36,807 (Fin.)	23,650	85,281	21,919	5,833	N.A.	N.A.
- Payments to Canadian Wheat Board for the purchase of hopper cars to facilitate the movement of Canadian grain exports (TSC)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
- Contribution to CN and CP re-leasing railway cars (TSC)	N.A.	N.A.	N.A.	N.A.	N.A.	3,430	N.A.
- Contribution to Wheat Board to cover carrying charges on reserve stocks of feed grains (TSC)	N.A.	N.A.	33,282	21,911	53,647	131,659	3,215
- Contribution to Railway Under Section 258 of Railway Act	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1,849
- Contribution to Railway Under Section 258 of Railway Act by Calendar 71/72 = 72 (T.)	N.A.	13,999	13,111	13,000	14,088	15,060	16,020
- Maritime Freight Rates Act (T.)	N.A.	2,822	6,937	11,422	15,972	21,748	23,692
- Atlantic Region Freight Assistance Act (T.)	38,857	63,768	162,369	141,336	117,554	204,414	183,351
Sub-Total							
<b>6. Research Programs</b>							
+ Animal Contagious Diseases (Ag.)	14,995	7,725	9,483	10,902	12,750	17,247	23,554
+ Animal Pathology Programs (Ag.)		3,628	4,027	4,335	5,469	6,417	10,275
+ Research activities (Ag.)	32,593	47,753	50,726	54,310	62,959	74,335	95,633
- Livestock Improvement (Ag.)	10	22	21	16	33	33	50
- New Crop Development Fund (Ag.)	N.A.	N.A.	N.A.	N.A.	N.A.	100	521
Sub-Total	47,568	59,128	64,257	69,663	81,151	98,132	130,033
<b>7. Extension and Information Services</b>							
+ Economics (Ag.)	979	3,940	6,706	7,080	7,819	8,850	9,833
+ Information (Ag.)	685	1,472	1,952	2,299	2,202	2,679	2,765
+ Elevator and Grain Documentation (Ag.)	N.A.	708	905	1,029	1,117	1,303	1,407
- Canadian National Livestock Records (Ag.)	45	50	50	50	65	50	50
Sub-Total	1,709	6,170	9,613	10,458	11,203	12,882	14,055
<b>8. Testing Services</b>							
+ Agricultural pest and disease control (Ag.)	N.A.	1,731	1,892	2,182	2,324	2,645	2,813
+ Meat inspection (Ag.)	N.A.	12,697	14,583	16,591	17,965	21,625	24,805
+ Grain inspection (Ag.)	5,60*	4,024	4,861	5,824	5,921	6,601	7,386
+ Grain testing and research (Ag.)	N.A.	928	1,090	1,336	1,682	1,997	2,058
+ Grain weighing (Ag.)	N.A.	2,147	2,581	2,702	2,541	2,724	3,539
Sub-Total	5,260	21,527	25,007	28,635	30,433	35,592	41,101
<b>9. Technical and Food Aid</b>							
- International Food Aid Program (E.A.)	34,539	100,141	75,529	94,272	66,274	106,981	212,288
- F.A.O. (E.A.)	979	1,226	1,538	1,528	2,142	2,141	3,224
Sub-Total	35,518	101,367	78,067	95,800	68,416	109,122	215,612

	65/66	70/71	71/72	72/73	73/74	74/75	75/76
10. Trade Promotion							
+ Marketing and promotion (Ag.)	2,360	7,579	8,725	10,065	11,441	13,482	15,067
- Rapsessed utilization assistance (IT&C)	N.A.	200	200	300	300	300	300
- Grains export credit (IT&C)	N.A.	1,599	2,291	2,106	5,946	11,904	10,070
- Grains and oilseeds marketing incentives (IT&C)	N.A.	N.A.	N.A.	726	318	412	390
- Contribution to the Canadian International Grains Institute (IT&C)	N.A.	N.A.	N.A.	N.A.	564	355	443
- Payments to western millers re stop off charges (IT&C)	N.A.	N.A.	N.A.	N.A.	139	133	200
+ Marketing (IT&C)	N.A.	N.A.	N.A.	1,117	1,418	1,569	3,343
Sub-Total	2,360	9,378	11,216	14,314	20,126	28,155	29,813
11. Social Adjustment and Rural Economic Development							
- ARDA (DREE)	28,383*	18,088	N.A.	N.A.	N.A.	N.A.	N.A.
- Rural Area Development (DREE)	N.A.	35,012	N.A.	N.A.	N.A.	N.A.	N.A.
- Canada Land Inventory (DREE)	N.A.	4,016	N.A.	N.A.	N.A.	N.A.	N.A.
+ Social Adjustment and Rural Economic Development (DREE)	N.A.	88,223	101,551	109,863	123,861	117,342	117,342
+ Lands Inventory (E.C.)	N.A.	N.A.	4,445	N.A.	N.A.	N.A.	N.A.
Sub-Total	28,383	57,116	88,223	105,996	109,863	123,861	117,342
12. Administration and Miscellaneous*							
+ Administration (Ag.)	15,476	16,612	17,181	20,518	29,836	38,500	41,461
+ Miscellaneous (Ag.)	68	7	6	8	25	39	33
+ Canadian Dairy Commission (Ag.)	N.A.	453	535	656	752	895	1,062
Sub-Total	15,544	17,072	17,722	21,182	30,613	39,434	42,556
GRAND TOTAL	259,258	565,318	623,717	718,253	785,377	1,171,826	1,345,122

\* Administration expenditures in CDA only, including contributions to superannuation accounts, operating and capital expenditures less revenue and receipts credited to vote. Miscellaneous includes membership fees and contributions to international and domestic organizations, etc.

- Grants, contributions or transfer payments only.

+ Including operating, capital and grants.

N.A. Not applicable or not available.

Source: (1) Public Accounts of Canada, Receiver General of Canada.

(2) Rail Economic Analysis, CIC, June 30, 1976

Table 2E ~~Net~~ EXPENDITURES IN AGRICULTURAL ACTIVITIES BY SPECIFIC FEDERAL GOVERNMENT DEPARTMENT  
CANADA, SELECTED YEARS 1965 to 1976

	65/66	70/71	71/72	72/73	73/74	74/75	75/76
Agriculture Canada (AC)	186,264	277,006	286,096	312,857	426,419	664,281	651,092
Department of Regional Economic Expansion (DREE)	N.A.	57,116	88,223	101,551	109,863	123,861	117,342
Environment Canada (EC)	N.A.	N.A.	N.A.	4,445	N.A.	N.A.	N.A.
External Affairs Department (EA)	35,518	101,367	78,067	95,800	68,416	109,122	215,612
Finance Department (Fin)	37,476	N.A.	N.A.	N.A.	N.A.	74	N.A.
Industry, Trade and Commerce (IT&C)	N.A.	55,420	102,516	141,648	85,557	104,282	248,309
Manpower and Immigration (MRI)	N.A.	N.A.	N.A.	N.A.	N.A.	1,539	3,462
Transport Canada (T)	N.A.	16,821	53,330	46,333	83,707	168,667	109,305
Special Fund for Schedule M (AC)	N.A.	57,588	15,485	15,619	11,415	N.A.	N.A.
<b>TOTAL</b>	<b>259,258</b>	<b>565,318</b>	<b>623,717</b>	<b>718,253</b>	<b>785,377</b>	<b>1,171,826</b>	<b>1,345,122</b>

As indicated by the entries in the top row of Matrix 3, these programs make their main contribution to the instrumental goal of providing nutritious food for all Canadians. They do this by reducing the prices which consumers pay for such essential products as milk and bread. In recent years, these savings have been estimated to approximate 8.5¢ per quart of (skim) milk and 8¢ per loaf of bread. By supporting producer returns in a number of horticultural products, the funds administered through the ASB have also helped to maintain the existing diversity of agricultural production, and to reduce the price instability which would result from distress selling. The substantial funds channelled into milk subsidies have expanded to market for dairy products, thereby stemming the flow of resources out of smaller-scale dairying. In this way, they have contributed to the maintenance if not the growth, of many rural communities, especially in eastern Ontario and in Québec.

The negative entry under the goal of Effective Resource Management reflects the obverse aspect of the previous statement. Namely, that direct commodity payments tend to slow down the rate of intersectoral resource adjustment to what would be (in their absence) an even more unfavourable set of supply and demand schedules.

### 3.2 DIRECT PAYMENT THROUGH SOCIAL PROGRAMS

Although growing somewhat in relative terms, this category of programs remains a tiny fraction of federal spending in agriculture. The category consists of such items as grants to local agricultural exhibitions and agricultural organizations, along with the farm labor pool function of the Department of Manpower and Immigration. In total, these programs account for less than one-half of one percent of all federal spending on agriculture. As indicated in the second row of Matrix 3, their major impact is on rural community development. Since farm families are the backbone of farm organizations and clubs, there is also a positive impact on viability of the family farm and (particularly through support to local fairs and 4-H Clubs) a contribution to the efficiency of production and to the goal of informed consumers of food.

### 3.3 CROP INSURANCE SUBSIDY

Through the Crop Insurance Administration, the Federal Government makes substantial contributions to the premium costs and administration expenses of the various provincial crop insurance plans. In addition, funds are provided from time to time for emergency crop loss assistance when particular areas suffer severe and widespread crop damage. This category of programs currently amounts to about 3 percent of total federal spending on agriculture, a percentage which has been growing as the rise in the farmer's cash costs of operation has increased his financial vulnerability.

Producer responses to high levels of risk tend to distort the planning process in non-optimal ways. By reducing a prime source of uncertainty, the availability of crop insurance at reasonable cost therefore contributes to the efficiency of production. The assurance of a minimum level of cash flow in spite of natural disasters also enhances the bargaining power of the individual producer, as for example in negotiating bank loans or credit purchases of land and equipment.

The major influence of crop insurance is in reducing the individual financial impact of natural hazards. By subsidizing and promoting crop insurance, the Government ensures that the losses will be spread out among the participating farmers and, to some extent, shared with the citizens of the country as a whole. Stability of producer returns is thereby enhanced.

Matrix 3 indicates that crop insurance programs contribute to the goal of enhancing the viability of family farms. This is because the family is normally less able to withstand a severe and unexpected financial setback than is the agribusiness corporation for which farming is only one aspect of a vertically integrated operation. Self-insurance is not as feasible an alternative for the family farm as it is for the diversified corporate farm.

### 3.4 ASSISTANCE IN PRODUCER FINANCING

Operations of the Farm Credit Corporation (FCC) and costs of providing advance payment to western grain producers account for the bulk of the expenditures under this category. Total spending tends to vary in step with the general level of prosperity in the economy, since buoyant conditions imply less need to rely on advance crop payments and fewer defaults on FCC loans.

By enhancing his ability to compete for credit in the financial markets, these programs are of particular assistance to the small farmer, the young or beginning farmer, and the farmer who must expand his operations to reach an economically viable scale. In the latter case, successful expansion represents an obvious contribution to the instrumental goal of efficiency in production. By easing the process through which beginning or expanding farmers can take over the operations of those who retire or who perceive improved opportunities outside agriculture, these programs increase the flexibility of inter-sectoral adjustments and result in more effective management of resources.

Improved access to credit, and the provision of advance payments and/or loans on stored crops serve to reduce the farmer's financial vulnerability and permit him to plan the marketing of his output in a more orderly manner. In this way, his bargaining position is made less precarious. At the same time, there is less pressure to obtain cash by rushing his crop to market immediately after harvest, so that product prices are not so likely to be subject to sharp seasonal fluctuations.

Differences in relative financial strength are one of the principal causes for concern about the outcome of the competition between family farms and corporate organizations for dominance in primary production activities. To the extent that they make this aspect of the contest more equal, the government's credit and crop loan programs are a significant step towards enhancing the viability of the family farm.

### 3.5 STORAGE AND FREIGHT ASSISTANCE

This is an important category of government expenditures on agriculture, which has accounted for 15 to 25 percent of total spending in recent years. Payments designed to reduce the cost to the producer of shipping certain commodities by rail from the prairies and from the Atlantic Provinces account for the bulk of the expenditures. Other significant items include defraying carrying costs on specified reserve stocks, and assisting in the construction of new storage facilities to be owned by producer groups.

These programs make a positive contribution to efficiency in marketing by helping to ensure that the producer is not forced to dispose of his output immediately after harvest and by preserving the railway network as the principal carrier of raw agricultural commodities.

The various programs of freight assistance make a strong contribution to the instrumental goal of market development by narrowing the difference between the world market price F.O.B. a deepwater port, and the farm-gate price. In this way, the producer has an incentive to expand production for export at world prices which would not otherwise cover his full costs. By the same token, however, there is a negative effect on the goal of increased domestic processing, since the freight assistance provided on raw commodities makes it less profitable to process them in the growing areas and ship them out as finished or semi-finished products. To some extent, this negative effect of the freight assistance provided for raw materials is offset by the positive impact of more modern and adequate storage facilities, which help to ensure a steady supply of high-quality produce for processing purposes and thereby encourage the expansion of processing facilities.

The program of capital grants to producer groups for construction of storage facilities, in particular, contributes to the goal of maintaining a diversified productive capacity. In the absence of adequate, modern storage capacity, producers of a number of horticultural crops in certain regions of the country would be unable to withstand the losses associated with spoilage and with periodic market gluts, and would go out of production.

Government contributions to the cost of maintaining otherwise unprofitable railway branch lines are a major item in this category of expenditures, and one which clearly contributes to the goal of rural community development.

To be more precise, the maintenance of a number of these branch lines is a necessary condition for the survival of certain smaller rural centres, although it is not a sufficient condition. While it can be argued that there are particular small rural villages which are trapped in a process of inevitable decay, this is not true for all the population centres which would be affected by a wholesale abandonment of all those branch lines which are unprofitable according to the accounting practices of the railways.

### 3.6 RESEARCH PROGRAMS

In recent years, expenditures in research programs have accounted for about 10 percent of the total federal spending in agriculture. Research activities are carried out through a network of federal and joint federal-provincial laboratories located in all regions of the country. The programs are mainly designed to determine optimum conditions of soil and climate for the production of specific crops and animals; create new and improved varieties of plants and animals; reduce losses caused by diseases, insects and weeds; improve management techniques for cropping or animal husbandry through biological and engineering studies; and to develop new and improved technology for the processing, preservation and utilization of food. Through these research programs, the nation's agricultural resources are being more efficiently utilized in the production of high-quality food. These programs therefore make strong positive contributions to the instrumental goals of efficient production and of high commodity standards.

The breeding and testing of new and improved varieties of plants and animals which will thrive even in the (sometime extreme) environment of the less developed countries enables Canada to offer more effective aid to a number of these nations.

Agriculture Canada's research programs also deal with market development. For example, the New Crop Development Fund is specifically designed to stimulate the development and adoption of new crops and new varieties offering commercial promise.

### 3.7 EXTENSION AND INFORMATION SERVICES

Federal spending in this category of programs has increased in both absolute and relative terms during the past decade. However, it remains a small fraction, about 1 percent in 1975/76, of total spending on agriculture. The major impact of these services, as indicated in Matrix 3, is in promoting the goals of efficient production and of well-informed food consumers.

One of the major operating programs is the annual National Outlook Conference hosted by the Economics Branch. The Outlook Conference provides information and analyses of current market situations, and short-term forecasts of supply,

demand and prices of agricultural products and inputs. These help producers in deciding how to allocate their resources so as to enhance net returns by adjusting production plans in line with anticipated market conditions.

The Small Farm Development Program administered by the Economics Branch also helps to achieve the goal of efficient production. It provides advisory services to small farmers to develop commercially viable farm businesses if they choose to remain in farming. It also provides information and analyses to help farmers to decide on future career activities and to make the adjustment to non-farm employment if they decide to give up farming. Hence a more efficient allocation of resources can be attained.

The Information Division carries out a broad public affairs program to inform the agricultural industry and the public about the policies, programs and activities of the Department of Agriculture, including new knowledge gained from its agricultural research. It also operates consumer-oriented programs prepared in cooperation with the Food Advisory Services unit. These programs contribute to greater efficiency in production and make useful information more readily available to food consumers.

### 3.8 TESTING SERVICES

This category of programs contributes mainly to the instrumental goal of high commodity standards. Although expenditures in testing services, which include inspection, have increased substantially, they still accounted for only 3 percent of total federal spending on agriculture in 1975/76. Meat inspection alone accounted for over 60 percent of this expenditure category.

These programs also have lesser impacts on other instrumental goals such as efficient production, efficient marketing and market development as indicated in Matrix 3. Through inspection, testing, research and control, pest infestation and disease can be prevented or detected at an early enough stage so that severe losses of production are avoided.

The high commodity standards achieved through testing and inspection also facilitate marketing and market development since buyers are assured of the quality of Canadian agricultural products.

### 3.9 TECHNICAL AND FOOD AID

Expenditures in this category have increased from a low of \$68.4 million in 1973/74 to a high of \$215.6 million in 1975/76. This increased federal expenditure permits more technical and food aid to be made available to a larger number of needy countries at a meaningful level. Therefore, the programs in this category contribute positively to the instrumental goal of effective technical and food aid.

Indirectly, technical and food aid also has a positive impact on the stability of producer returns. Commodities which are in excess supply can frequently form part of aid shipments and thereby help to alleviate downward pressure on prices.

As indicated in Matrix 3, technical and food aid can have a negative impact on market development. These programs may interfere with normal commercial trade as they provide incentives for substituting aid for normal exports. However, most aid programs involve the use of Canadian products and familiarization with Canadian goods may lead to the development of new markets.

### 3.10 TRADE PROMOTION

Expenditures in this category increased from \$2.4 million in 1965/66 to \$29.8 million in 1975/76. Almost all of these funds were used to promote the export of grains and oilseeds and thus contributed to the instrumental goal of market development. The availability of markets provides incentives for production. Therefore, the instrumental goal of diversification of production is also promoted.

The Grains Export Credit which facilitates and assists export trade by provision of credit constituted about one-third of the total expenditures in this category. This program permits sales of grains which would not be possible through normal channels of financing. It therefore increases the markets for Canadian grains.

Although the Canadian International Grain Institute accounts for only a small fraction of the expenditures in this category, it contributes to the maintenance and enlargement of markets for Canadian grains and oilseeds by exposing the existing and potential customers to grain marketing, handling and technology in Canada. Therefore, it has a significant impact on market development.

### 3.11 SOCIAL ADJUSTMENT AND RURAL ECONOMIC DEVELOPMENT

Expenditures in this category have remained relatively stable during the past five years. Most of the programs are administered by the Department of Regional Economic Expansion (DREE). The objectives of the programs in this category are to increase income, to expand employment opportunities and to improve the standard of living in rural areas. Therefore, the major impact of this category is on the instrumental goal of rural community development.

Programs in this category also influence the instrumental goals of efficient production and efficient marketing as these are a corollary of achieving the objectives of the programs.

### 3.12 ADMINISTRATIVE ACTIVITIES

These include overhead expenditures, membership fees and contributions to various organizations by Agriculture Canada. Expenditures in this category have been consistently increasing in the past decade. Although this category does not contribute specifically to any one of the instrumental goals, it does provide essential services and facilities for operating and maintaining other categories of programs. Therefore, it indirectly affects the full range of instrumental goals.

### B.4 REGULATORY INSTRUMENTS

While much attention is focused on government expenditures, the role that regulations play in the pursuit of agricultural goals is often underestimated. Regulations can encourage certain activities relative to other activities in much the same way that subsidies can. For example, an increase in the tariff for one commodity can be expected to increase the domestic value added from producing that commodity in the same way that a commodity subsidy would increase it. Regulations that have an important impact on agriculture are extensive in scope and involve several departments of government. The following categories of regulatory instruments are illustrated in matrix 3b.

#### 4.1 TRADE AND TARIFF MEASURES

Competition from imports and the ability of Canadian products to compete in foreign markets are important factors affecting the achievement of our national goals. Exports have been a significant driving force in Canadian economic development and an outward looking international economic policy has been characteristic of Canada. Canada has actively participated in negotiating the General Agreement on Tariffs and Trade as well as individual Commodity agreements.

Canada's tariffs on agricultural products are low in comparison to those on processed food products. This tariff differential provides a high level of effective protection to the processing of agricultural products in Canada. If agricultural products received the same effective tariff protection as processed food products, resources would be encouraged to move into agriculture thus enlarging the agriculture sector.

Trade and tariff measures have both a positive and negative effect on the achievement of efficient production. While agricultural tariffs are usually low, quantitative restrictions are used for certain agricultural commodities, such as dairy products, where competition from imports would lead to both instability of producer returns and a smaller Canadian industry. By using these restrictions, resources are encouraged to remain in certain activities. This may not represent the wisest use of resources over the long term but in the short term painful adjustments costs are avoided or delayed.

Import restrictions on processed food products reduce the competition from imports and this way expand the domestic market. The protection afforded food processors often strengthens the power of a few large firms thereby encouraging the development of an oligopolistic market structure. On the other hand, lower protection without any compensating changes in protection in other countries would mean that Canadian firms would operate in an even smaller market with resulting higher costs. Thus production in Canada is more diversified by protecting food processing although the market power of food processors relative to that of producers is thereby enhanced.

International agreements, whether of a general or specific nature, usually have a positive effect on Canada's instrumental goals. The security of imported supplies and the stability of producer returns are both enhanced when effective international agreements are negotiated.

#### 4.2 TRANSPORT RATES AND REGULATIONS

Regulations in the transport area not only affect the location of Canadian production but also the amount produced of different commodities and the development of rural commodities. For these reasons, transportation has always been a major issue in agricultural communities especially in the Prairie Provinces where rail transport brought settlers and manufactured goods into the region and took farm products out. The procedures by which rail freight rates were determined led to low rates on raw products and high rates on processed products. In the prairies, this reinforced the pattern of producing raw materials for export and importing processed products from outside the region.

The most controversial transport rate is the statutory rate for grain shipped out of the prairies to export position. This rate has been fixed at a very low level which encourages the production of grain for export rather than for domestic use. Other transport restrictions have prevented the railways from abandoning rail-lines in rural areas. This action has preserved many communities which could not have survived without rail transport. One important effect of such transport restrictions is to retard the development of a more modern and efficient transport system. This has led to bottlenecks and hampered export sales.

#### 4.3 COMPETITION LAWS

Laws governing permissible behaviour in the market place are especially important to assuring equitable bargaining power between farmers and those that buy from or sell to them. The anti-combines laws make it illegal to collude to fix prices or to drive out competitors by unfair practices. Such laws aim to regulate the market conduct of large firms and to encourage an

industry structure such that performance of the industry will enhance the achievement of society's goals. The exemption from competition laws provided to agricultural marketing agencies, such as the Canadian Egg Marketing Agency, is an important provision allowing these agencies to set prices and control the volumes marketed. Such agencies are regulated by government appointed bodies to ensure that their powers are not abused.

The effect of competition laws on efficiency in food processing, distribution and retailing industries is questionable. In practice, the difficulty of proving illegal conduct has meant that such laws have not been greatly used although their potential use influences the behaviour of large firms.

#### 4.4 ADMINISTRATION OF COMMODITY MARKETS

In addition to the exemption from competition laws afforded agricultural marketing agencies, such agencies are encouraged by the existence of a regulatory agency, the National Farm Products Marketing Council, and by a set of rules or establishing a new agency. The supervision of commodity exchanges is important for commodities not marketed through a central agency and for providing a supervisory or regulatory role for marketing boards. Rules to ensure the fair operation of commodity markets facilitate their role in establishing efficient prices for current and future time periods.

Such administration should operate to increase producer bargaining powers, enhance stability of producer returns, and encourage efficient marketing. However, the problems that marketing boards face in matching production with demand for the product at a fixed price have often led to inefficiencies in the production process. Quotas may force a producer to utilize his farm at less than full capacity raising his per unit costs or it may force new entrants to cope with a higher cost structure due to the costs of purchasing a quota.

#### 4.5 TAX LAWS

There are special provisions in the tax laws which contribute to effective resource management, stability of producer returns and the development of viable farm units. Accumulated depreciation allowances and the investment tax credit encourage capital improvements. Income averaging over several years can provide considerable stability to the level of after-tax income from farming. Finally, the provision for non-taxable inter-generational transfers of farm holdings eliminates the necessity to break-up or sell farm units in order to pay inheritance taxes thereby preserving viable family farm units.

#### 4.6 HEALTH STANDARDS AND LABELLING REQUIREMENTS

Government regulations specifying which products can be sold and how products can be sold help ensure high commodity standards and the availability of nutritious food. These regulations do impose costs on the food industry but the benefits from disease prevention and improved nutrition are believed to more than offset these additional costs.

Labelling requirements are designed to inform consumers about the product they are purchasing. These requirements are becoming more sophisticated as efforts are made to provide more information on labels. This should aid those concerned with good nutrition or those requiring special diets.

#### 4.7 LABOUR MARKET AND IMMIGRATION RULES

Labour market policies such as minimum wage legislation and unemployment insurance have the effect of raising the price of labour to farmers. Even though the minimum wage may not apply to farm labourers, farmers must offer a high enough wage to attract workers from occupations in which the minimum wage prevails and for which the option of unemployment insurance exists. These policies that raise the price of labour are to some degree counteracted by special seasonal immigration programs which provide foreign workers to assist in labour intensive farm jobs. The effect of these labour market and immigration rules on effective resource management is mixed. Increased capital intensity of agricultural production is partly due to such programs but whether resource management is better or worse as a result is difficult to judge.

#### 4.8 LAND USE DECISIONS

While land use is clearly a provincial responsibility, the Federal Government can influence the use of land by establishing national guidelines, by monitoring foreign investment in land and by direct use of federal property. Land use decisions have their major impacts on rural community development and resource management.

### C. MAJOR IMPACTS ON CANADIAN AGRICULTURAL DEVELOPMENT

#### C.1 PERFORMANCE INDICATORS

The impacts of agricultural policy can be at least partially evaluated by selecting relevant performance indicators and then examining their fluctuations over appropriate periods of time. The chosen indicators are thus intended to serve as reliable proxies for the economic welfare of specific subsectors within agriculture or of the agricultural sector as a whole.

This section examines recent trends in a number of such performance indicators and discusses the extent to which they measure progress in achieving Agriculture Canada's second order objectives or instrumental goals. More than forty examples of specific performance indicators have been grouped under the fourteen second order instrumental goals (in three program areas) which form the rows of Matrix 2 and the columns of Matrix 3. Table 3 identifies the indicators adopted for each of the instrumental goals and indicates the form in which the data is presented, i.e., tabular (T) or graphically (G). Table 3 also shows whether each indicator reflects the effectiveness of the relevant programs or is merely a gauge of the level of program activity.

In the following subsections, the rationale underlying the choice of the selected performance indicators for each instrumental goal is first explained. The time series of each indicator is then examined in order to assess its ability to demonstrate the degree to which particular instrumental goals are being attained. The fourteen instrumental goals or second order objectives are discussed sequentially.

## 1.1 PRODUCTION AND MARKETING

### 1.1.1 Efficient Production

Various types of productivity indexes can be employed to evaluate changes in productive efficiency. These include overall productivity measures (e.g., farm output per unit of combined productive inputs) as well as the outputs per unit of labour, or of capital, respectively. Also useful are measures of productivity improvement in particular commodities such as yields of field crops per hectare, milk production per dairy cow and record of performance measures for livestock.

A recent study<sup>5</sup> indicates that overall productivity in the Canadian agricultural sector recorded a very small annual average increase of 0.07 percent over the period 1962-74, as shown in Figure 2. However, the relative constancy of the national average masks average annual reductions in productivity in the prairies (-0.35 percent per year) and in British Columbia (-2.13) which were offset by positive trends in Ontario (+0.72), Quebec (+0.42) and the Atlantic region (+0.86).

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<sup>5</sup> Shute, D.M., National and Regional Productivity of Canadian Agriculture 1961 to 1974, Canadian Farm Economics, Vol. 10, No. 6, December 1975.

Table 3 SELECTED PERFORMANCE INDICATORS FOR AGRICULTURE, CANADA, 1976

Program Area and Instrumental Goal	Description of Performance Indicator	Graphic or Tabular Form	Action or Effectiveness Type
<b>1. PRODUCTION AND MARKETING</b>			
1.1 Efficient Production	Productivity index for agricultural and other sectors: aggregate; labour, Capital.	G	E
	Trend comparison with USA Agriculture	G	E
	Trends in milk production per cow	G, T	E
	Boar performance (weight gain)	T	E
	ROP data for cattle	T	A
	Average yields for grains, oilseeds & other crops	T	E
	Trends in testing for and slaughtering diseased animals	G, T	A
	Number of federal veterinarians	T	A
	Extent of seed disease and inspection	G, T	A, E
1.2 Efficient Marketing	Value added per unit of output in food-processing and other industries	G	E
	Ratios of Consumer Price Index to Industry Selling Prices for Food Processing Industries	G	E
	Comparisons of Farm Price Index with Food Industry Selling Price Index and CPI (Food)	G	E
1.3 Effective Resource Management	Percentage of total employment, by major industry	G	E
	Changes in manufacturing and farm wage rates	G	E

Table 3 SELECTED PERFORMANCE INDICATORS, FOR AGRICULTURE, CANADA, 1976  
 (Continued)

Program Area and Instrumental Goal	Description of Performance Indicator	Graphic or Tabular Form	Action or Effec- tiveness Type
	Farm loan interest rates versus prime rate	G	E
	Loans, under the Farm Credit Act	G,T	A
	Grants and special credits under the Small Farm Development Program	T	A
	Counselling services under the Small Farm Development Program	T	A
	Area of improved farm land, by region	G,T	E
	Increases in irrigated area, by province	T	E
1.4 Market Development	Agricultural exports as percent of all exports	G	E
	Growth in exports of key commodities	G	E
	Volume indexes of agricultural imports and exports	G	E
	Trends in Real Domestic Product, food and other industries	G	E
	Selected food imports as percentage of consumption	G	E
1.5 Effective Food and Technical Aid	Trends in Canadian expenditures on development assistance and food aid	G	A
2. FOOD QUALITY & SECURITY			
2.1 Nutritious Food for all Canadians	Indexes of CPI components vs. changes in income of lowest income class	G	E

Table 3 SELECTED PERFORMANCE INDICATORS, FOR AGRICULTURE, CANADA, 1976

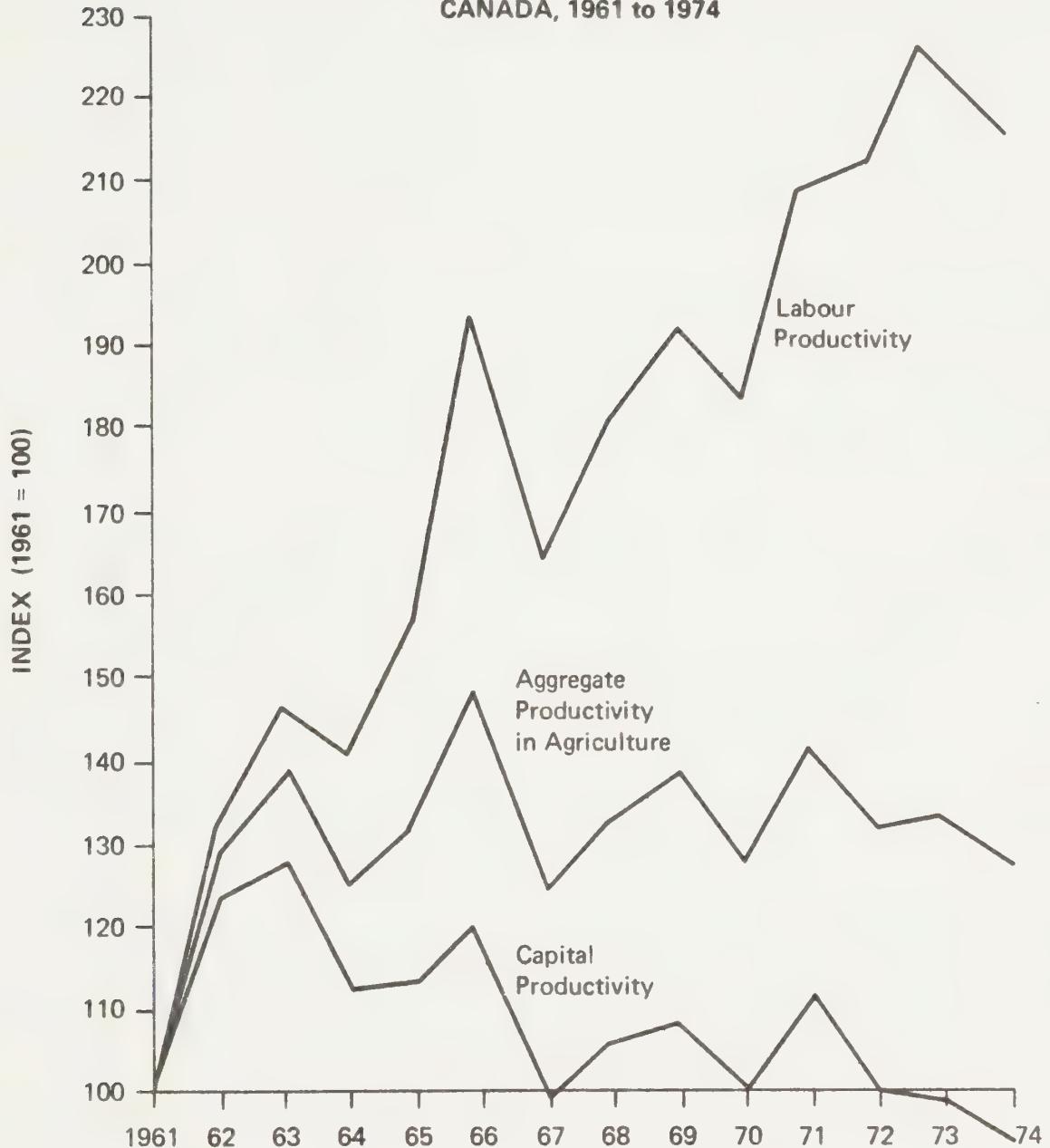
(Continued)

Program Area and Instrumental Goal	Description of Performance Indicator	Graphic or Tabular Form	Action or Effic- tiveness Type
2.2 Informed Food Consumer	Activity levels of Agriculture Canada's Information Division	T	A
2.3 High Commodity Standards	Percentage of slaughtering in federally inspected establishments, by type of animal	G	A
	Activity levels, fresh & processed fruit & vegetable inspection	T	A,E
2.4 Diversification of Production	Percentages of farm cash receipts from various commodities	T	E
	Fraction of field crop output accounted for by major grains	T	E
2.5 Security of Imported Supplies	Imports of major commodities from USA and other countries	T	E
	Recent trends in imports of tropical products	T	E
3. RURAL DEVELOPMENT & INCOME SECURITY			
3.1 Increased Producer Bargaining Power	Changes in ratio of farm price index to farm input price index	G	E
	Aggregate net farm income by type of farm	T	E
	Proportion of producer sales made through marketing boards	T	A,E

Table 3 SELECTED PERFORMANCE INDICATORS, FOR AGRICULTURE, CANADA, 1976  
(Concluded)

Program Area and Instrumental Goal	Description of Performance Indicator	Graphic or Tabular Form	Action or Effectiveness Type
3.2 Stability of Producer Returns	Stabilization payments by commodity and as percent of total receipts	G	E
	Consumer price index movements in selected countries	G	E
	Fluctuations in producer returns since 1972 for selected commodities	G	E
	Producer crop insurance premiums and extent of participation in crop insurance schemes	G,T	A,E
3.3 Viable Farm Units	Farm and off-farm sources of net farm income, by region	T	E
	Recent trends in share of income from off-farm sources	T	E
	Trends in farm vs. non-farm incomes	G	E
	Income sources by farm type	T	E
	Changes in components of income from farming operations	T	E
3.4 Rural Community Development	Percentage movements in rural and urban population	G	E
	Labour force in rural communities by types of industry	T	E
	Types of rural communities by regions		

FIGURE 2  
INDEXES OF LABOUR & CAPITAL PRODUCTIVITY IN AGRICULTURE,  
CANADA, 1961 to 1974



Source: Shute, D.M. National and Regional Productivity of Canadian Agriculture, 1961 to 1974, Canadian Farm Economics, Vol. 10, No. 6, Dec. 1975.

What at first appears to be a substantial average annual rate of increase in total output of 1.25 percent was achieved only by increasing the use of factor inputs at an annual rate of 1.18 percent. Capital inputs rose from 38 percent of total inputs in 1962 to 51 percent in 1974, making agriculture much more capital-intensive and compensating for the sharp decline in labour inputs which dropped from 53 percent of the total in 1962 to 20 percent in 1974.

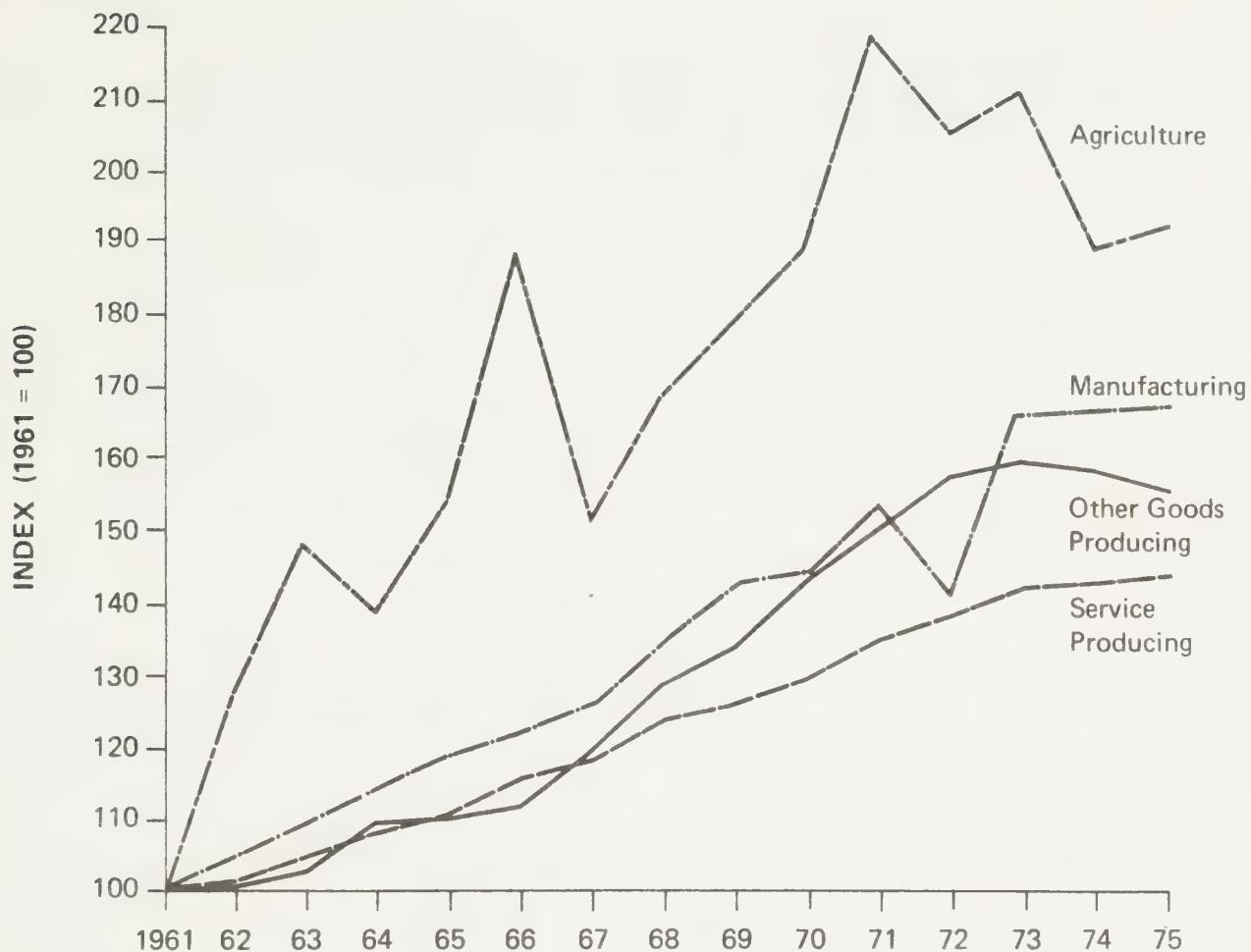
Increases in the value of output per dollar of labour input in agriculture have consistently exceeded those in other major sectors of the economy over this period. This reflects the provision of large amounts of additional capital per worker as well as some improvements in work-force skill and effort. The value of output per dollar of capital input, which also appears in Figure 2, indicates a gradual downward trend which is consistent with the expectations of diminishing returns to additional quantities of a particular input when complementary inputs are held constant, or are reduced.

The upper half of Figure 3 compares changes in the productivity of labour in agriculture with output per man-hour in the other major sectors of the Canadian economy. The record clearly shows that labour productivity in agriculture has grown faster than in the balance of the economy. The comparison contained in the lower portion of this figure is even more meaningful since it indicates that the overall productivity of Canadian agriculture has kept pace with that of the United States (up to 1975) despite wider fluctuations from year to year.

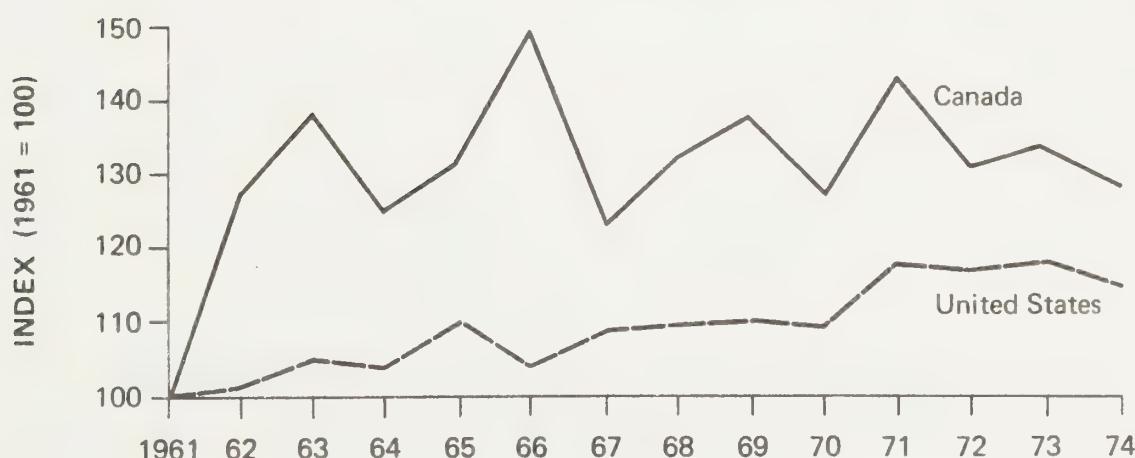
The productivity experience of specific subsectors within Canadian agriculture provides a less ambiguous picture of the degree to which efficiency goals have been achieved. Indexes of the average milk per cow for Record of Performance (ROP) herds of different dairy breeds recorded increases ranging from 15 to 36 percent over the period 1965 to 1976. The ROP trends over this period, shown in Figure 4, reveal significant progress based on genetic improvement combined with the application of advanced management practices. These improvements are also reflected in Table 4 which sets out the national and regional gains in average milk production per cow from 1966 to 1976. Average production per cow increased about 22 percent for Canada as a whole with regional gains ranging from 14 percent in Québec to 31 percent in Ontario.

Estimates of improvements in feed conversion ratios (i.e., the pounds of feed required to produce 100 pounds of weight gain) and average daily poundage gain for different breeds of swine raised for market in 1973, 1974 and 1975, are given in Table 5. While average daily poundage gain remained relatively stable, there were significant improvements in average feed conversion ratios which increased by about 5 percent.

FIGURE 3  
LABOUR PRODUCTIVITY (OUTPUT/MAN-HOUR) INDEXES, CANADA, 1961 to 1975

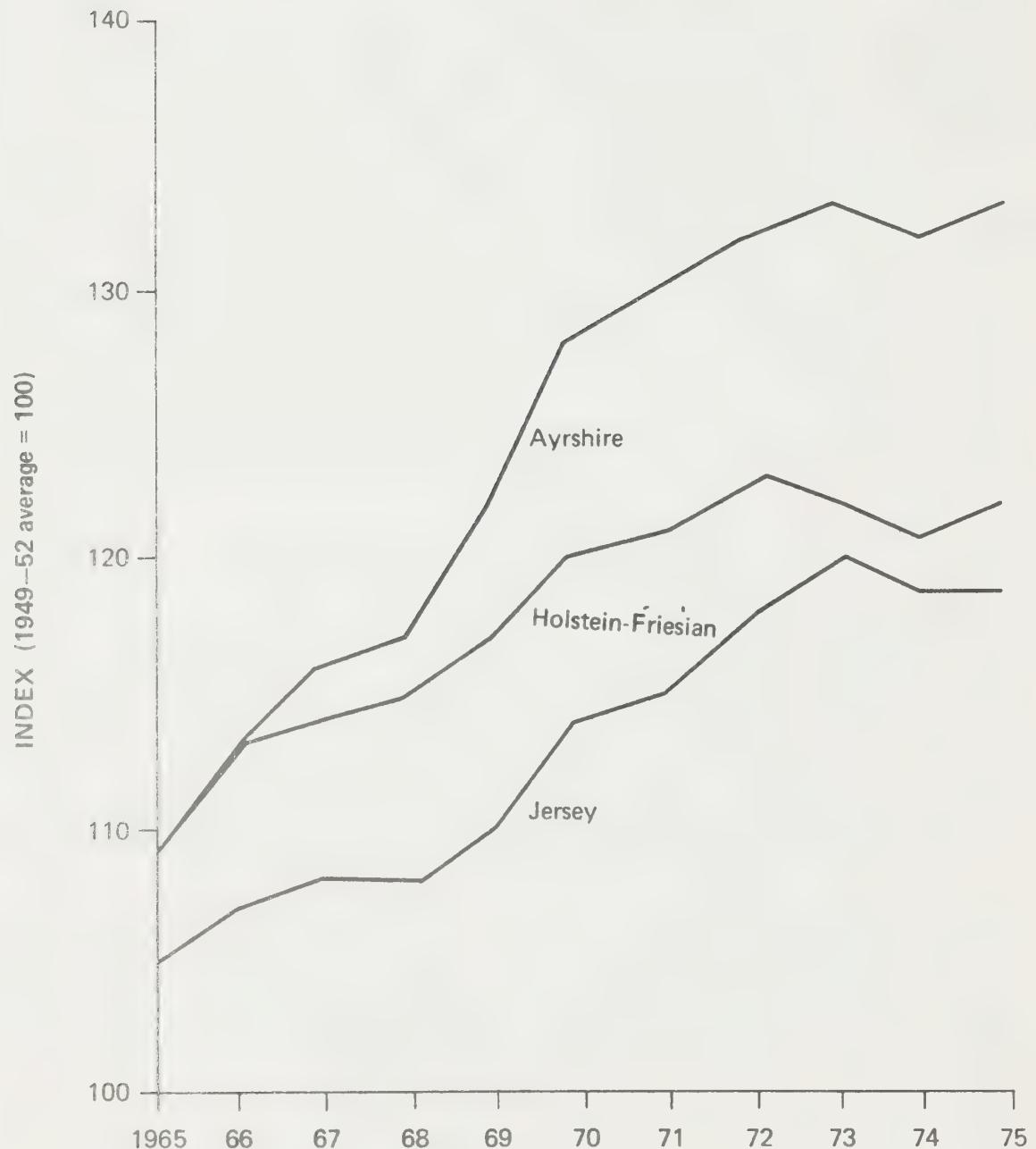


AGRICULTURAL PRODUCTIVITY (OUTPUT/INPUT) INDEXES,  
CANADA & UNITED STATES, 1961 to 1974



Source: Shute, D.M. National and Regional Productivity of Canadian Agriculture, 1961 to 1974, Canadian Farm Economics, Vol. 10, No. 6, Dec. 1975.

FIGURE 4  
INDEXES OF AVERAGE MILK PRODUCTION PER COW,  
CANADA, 1965 to 1975



Source: Agriculture Canada, Canadian Record of Performance for Dairy Cattle Summary Report, 1975.

Table 4 DAIRY CATTLE AND MILK PRODUCTION, CANADA AND REGIONS, SELECTED YEARS, 1966 TO 1976

Year	No. of Dairy Cattle (000)	Production (million lbs.)	Average Production Per Cow (000 lbs.)
<b>CANADA</b>			
1966	2,674	18,374	6.8
1970	2,389	18,024	7.5
1973	2,152	16,886	7.8
1975	2,136	17,073	8.0
1976	2,048	16,942	8.3
% increase 76/66	-23.4	- 7.8	+22.1
<b>ATLANTIC</b>			
1966	141	898	6.4
1970	113	805	7.1
1973	96	746	7.8
1975	99	746	7.5
1976	96	796	8.3
% increase 76/66	-31.9	-11.4	+29.7
<b>QUEBEC</b>			
1966	995	6,417	6.4
1970	950	6,866	7.2
1973	915	6,298	6.9
1975	950	6,772	7.1
1976	910	6,637	7.3
% increase 76/66	- 8.5	3.4	+14.1
<b>ONTARIO</b>			
1966	909	6,801	7.5
1970	820	6,355	7.8
1973	700	6,009	8.6
1975	640	6,048	9.5
1976	610	5,992	9.8
% increase 76/66	-32.9	-11.9	+30.7
<b>WEST</b>			
1966	628	4,258	6.7
1970	506	3,998	7.9
1973	441	3,833	8.7
1975	447	3,506	7.8
1976	432	3,516	8.1
% increase 76/66	-31.2	-17.4	+20.9

Sources: (1) Agriculture Canada, Selected Agricultural Statistics, Pub. 76/10.

(2) Statistics Canada, Cat. 23-201.

Table 5 BOAR PERFORMANCE, BREED AVERAGES<sup>a</sup> (SWINE ROP), CANADA, 1973 TO 1975

	Average Daily Gain			Feed Conversion <sup>b</sup>			% Increase 1973-75
	1973	1974	1975	1973	1974	1975	
-lb-							
Yorkshire	1.89	1.89	1.90	249	257	258	3.6
Landrace	1.83	1.83	1.84	264	271	274	3.8
Lacombe	1.97	2.01	2.00	255	260	262	2.8
Hampshire	1.82	1.83	1.81	256	265	270	5.4
Duroc Jersey	1.95	1.89	1.93	245	255	253	3.3
Breed Cross	2.03	2.00	1.89	243	262	274	12.8
National	1.88	1.87	1.89	254	262	263	3.5

<sup>a</sup>There are differences in quality and variety of feeds. Therefore, the figures given are for production performance in each year.

<sup>b</sup>Pounds of feed consumed per 100 pounds of live gain.

Source: Agriculture Canada, Federal-Provincial Record of Performance for Swine Programme, Third Annual Report, 1975.

A performance indicator based on the average daily gain by weight of breeds of beef cattle at specified maturity dates associated with the use of different combinations of more nutritious feeds can be constructed and would demonstrate the potential for improvements in weight gain based on better genetic quality. However, these are mainly experimental results for which there is no consistent relation between the technological improvement factor (the weight gain) and the relative costs of different feed ingredients which must be a major factor in the feed formulations adopted by individual live-stock producers.

A better performance indicator, therefore, may be the numbers of registered ROP beef calves as a proportion of the total beef calf population over recent years. The top half of Table 6 shows increases in the proportion of ROP-tested beef cattle from 1968 to 1974 while the lower portion estimates this same proportion for purebred calves. The data suggest two important conclusions. First, the calf crop percentage experienced an upward movement which is consistent with improved management practices over these years as well as an improved conception or calving rate. Second, the ROP program appears to be having a significant impact on the Canadian beef cattle industry. The table shows a pronounced trend towards increased ROP testing of purebreds with more than 50 percent of the annual calf crop, in four popular breeds, being tested.

Table 6 APPROXIMATE PROPORTION OF BEEF CALF CROP THAT IS ROP TESTED,  
CANADA, 1968 TO 1974

Year	Beef Cow Population	Estimated Beef Calf Population <sup>a</sup>	Calf Crop Percent	No. Calves Tested	Percent Calves Tested	
	<b>-000-</b>		<b>%</b>		<b>-000-</b>	
1968	2,967	1,829	62	20	1.8	
1969	2,983	1,814	61	36	2.0	
1970	3,177	1,993	63	54	2.3	
1971	3,514	2,233	64	57	2.5	
1972	3,679	2,375	65	66	2.8	
1973 <sup>b</sup>	3,951	2,611	66	113	4.3	
1974 <sup>b</sup>	4,228	2,898	69	115	4.0	

ESTIMATED PROPORTION OF PUREBRED CALF CROP THAT  
IS ROP TESTED, CANADA, 1969 TO 1974

Breed	1969	1970	1971	1972	1973	1974
			<b>- percent -</b>			
Aberdeen Angus	41.7	46.6	59.6	64.4	58.0	57
Hereford	30.3	36.1	46.3	48.7	44.7	57
Shorthorn <sup>c</sup>	28.9	41.4	50.8	65.7	61.2	65
Charolais <sup>d</sup>	22.0	27.5	26.1	68.7	40.1	60
Red Poll	14.8		30.9	34.8	13.7	19
Simmental <sup>d</sup>			25.6	28.1	31.6	47
Maine-Anhou <sup>d</sup>			1.5	3.7	7.0	31
Highland			10.3	10.5		
Limousin					6.5	
Chianina						19
Murray Grey						22

<sup>a</sup>Estimated December to December calf crop.

<sup>b</sup>Includes all federal-provincial and Alberta ROP data.

<sup>c</sup>Includes dual-purpose.

<sup>d</sup>Includes recorded and registered.

Sources: (1) Statistics Canada, Cat. 23-004.

(2) Agriculture Canada, Federal-Provincial Record of Performance for Beef Cattle 1974/1975, Nineteenth Annual Report.

Swine performance testing in Canada is also increasing, with more than 34,000 pigs evaluated in federal-provincial home tests and more than 3,000 boars rated in federal station tests during 1976. With the assistance of the testing program, hog breeders have improved their breeding stock and been able to produce leaner pigs which bring higher market returns and increase consumer satisfaction with the product.

Average yield per hectare for the major field crops (wheat, oats, barley, corn and hay) experienced large increases over the thirty-five years from 1935-70. However, the rate of increase has fallen off sharply during the seventies. Table 7 shows that over the entire forty-year period increases of 107.4, 89.4, 90.8, 97.0 and 20.2 percent were recorded for wheat, oats, barley, corn and hay, respectively. Table 8 displays average yield data for the major horticultural products over comparable time periods. The Table indicates that percentage improvements in these yields from the 1956-60 base period to the 1971-75 period were high for tomatoes, cucumbers, sugar beets, and tobacco; moderate for potatoes, onions, lettuce and carrots; but lower for peas and cabbage.

It is extremely risky to base any firm conclusions on the available measures of overall productivity in agriculture during the past decade because of the rapid changes in the production function and the dominating influence of sharp fluctuations in grain yields and prices. More reliance should, therefore, be placed on productivity measures for the various sub-sectors of agriculture. In general, these indicators reveal gradual improvements in output per unit of input, both nationally and in all regions.

One of the statutory responsibilities of Agriculture Canada is to enhance productive efficiency by adopting measures to effectively control the spread of plant and animal diseases. The level of effort in this area is indicated by the volume of inspection and testing aimed at pinpointing the incidence of diseases so that appropriate controls can be implemented. The effectiveness of these efforts is a more difficult question since many important variables affecting the severity and spread of plant and animal diseases are simply not subject to human control. However, the number of infected animals which must be slaughtered is a partial indication of the degree to which the economic losses of livestock producers have been held in check.

Table 9 summarizes disease testing, animals slaughtered and compensation paid to producers for two of the more prevalent diseases which affected livestock herds over the period 1967-76. Figure 5 presents similar statistics in graphic form which emphasize the importance of the battle against brucellosis.

While Table 9 shows a fairly consistent increase in the amounts of compensation paid to producers, the numbers of slaughtered animals gives a better indication of the extent to which these two diseases are being held in check. This is because the compensation figures are affected both by general inflation and by the fact that the compensation programs have been made much more generous in

Table 7 AVERAGE YIELD OF MAJOR CEREAL AND FORAGE CROPS, CANADA & REGIONS,  
SELECTED FIVE-YEAR PERIODS, 1935 TO 1975

	All Wheat	Oats for Grain	Barley	Corn for Grain	Tame Hay
- tonnes per hectare -					
Atlantic Provinces					
1935-39	.9	1.2	1.4	-	3.4
1966-70	2.4	1.9	2.4	-	4.4
1971-75	2.5	1.8	2.2	-	4.3
71-75/35-39 %	177	50	57	-	27
71-75/66-70 %	4	-5	-8	-	-2
Quebec					
1935-39	1.1	1.0	1.3	-	3.2
1966-70	1.8	1.6	2.0	4.8	4.6
1971-75	1.7	1.4	1.8	4.9	4.2
71-75/35-39 %	55	40	39	-	31
71-75/66-70 %	-6	-13	-10	2	-9
Ontario					
1935-39	1.7	1.3	1.6	2.6	4.1
1966-70	2.8	2.1	2.7	5.2	5.7
1971-75	2.9	2.0	2.1	5.1	5.5
71-75/35-39 %	71	54	31	96	34
71-75/66-70 %	4	-5	-22	-2	-4
Prairie Provinces					
1935-39	.8	.9	1.0	-	3.5
1966-70	1.6	1.8	2.0	2.6	3.4
1971-75	1.7	1.9	2.1	3.3	3.9
71-75/35-39	113	111	110	-	11
71-75/66-70	6	6	5	27	15
British Columbia					
1935-39	1.6	1.9	1.7	-	5.1
1966-70	1.7	1.9	1.7	-	5.8
1971-75	1.8	2.1	1.9	-	6.0
71-75/35-39	13	11	12	-	18
71-75/66-70	6	11	12	-	4
All Canada					
1935-39	.8	1.0	1.1	2.6	3.7
1966-70	1.7	1.8	2.0	5.2	4.4
1971-75	1.7	1.9	2.1	5.1	4.4
71-75/35-39	113	90	91	96	19
71-75/66-70	0	6	5	-2	0

Source: Selected Agricultural Statistics for Canada, June 1976.  
Agriculture Canada.

Table 8 VEGETABLES AND SPECIAL CROPS, AVERAGE YIELD EXAMPLES, CANADA,  
FIVE-YEAR PERIODS, 1956 TO 1976

Years	1956-60	1961-65	1966-70	1971-75	Change 1956/60-1971/75
- kilograms per hectare -					
Cabbage	20,841	21,591	22,818	22,186	6.4
Carrots	23,000	27,318	30,068	27,497	19.6
Cucumbers	n.a.	6,932	12,955	15,341	121.3 <sup>c</sup>
Lettuce	12,386	13,273	12,955	15,099	21.9
Onions	21,886	27,295	26,818	26,882	22.8
Peas	2,591	2,796	2,841	2,906	12.1
Tomatoes	13,750 <sup>a</sup>	20,091 <sup>b</sup>	28,523	32,813	138.6
Potatoes	154,204	180,455	191,932	210,000	36.2
	1964-68	1969-73	1973-74	1974-75	% increase
Flue-Cured Tobacco	1,932	2,380	2,389	3,282	69.9
Sugar-Beets	30,535	31,940	27,860	29,708	-2.7

<sup>a</sup>Based on two years.

<sup>b</sup>Based on one year.

<sup>c</sup>Period 1971-75 over period 1961-65 increase.

(1) Statistics Canada, Cat. 22-003.

(2) Statistics Canada, Fruit and Vegetable Historical Reference, 1976.

(3) Agriculture Canada, Market Commentary, Horticulture and Special Crops,  
June 1976.

Table 9 TESTS CONDUCTED, INFECTED ANIMALS SLAUGHTERED AND COMPENSATION PAID, CANADA, 1966 TO 1976

Fiscal Years	<u>Johnne's Disease</u>		
	No. Cattle Tested	No. Slaughtered	Compensation
	'000	'000	\$000
1966-67	2.3	.1	14.8
1967-68	.8	.1	7.0
1968-69	.6	.04	4.4
1969-70	1.4	.1	15.9
1970-71	.9	.06	8.4
1971-72	.7	.1	18.8
1972-73	1.5	.1	14.6
1973-74	.9	.1	20.3
1974-75	1.1	.3	79.8
1975-76	3.8	.5	121.9

Fiscal Years	<u>Tuberculosis</u>		
	No. Animals Tested	No. Slaughtered	Compensation
	'000	'000	\$000
1966-67	867.1	1.0	76.6
1967-68	696.5	1.2	85.4
1968-69	474.5	.7	58.1
1969-70	378.0	.4	49.6
1970-71	438.9	.5	58.8
1971-72	311.3	.3	33.9
1972-73	349.5	.4	50.7
1973-74	380.7	.4	64.5
1974-75	471.7	.7	182.3
1975-76	570.2	1.7	416.0

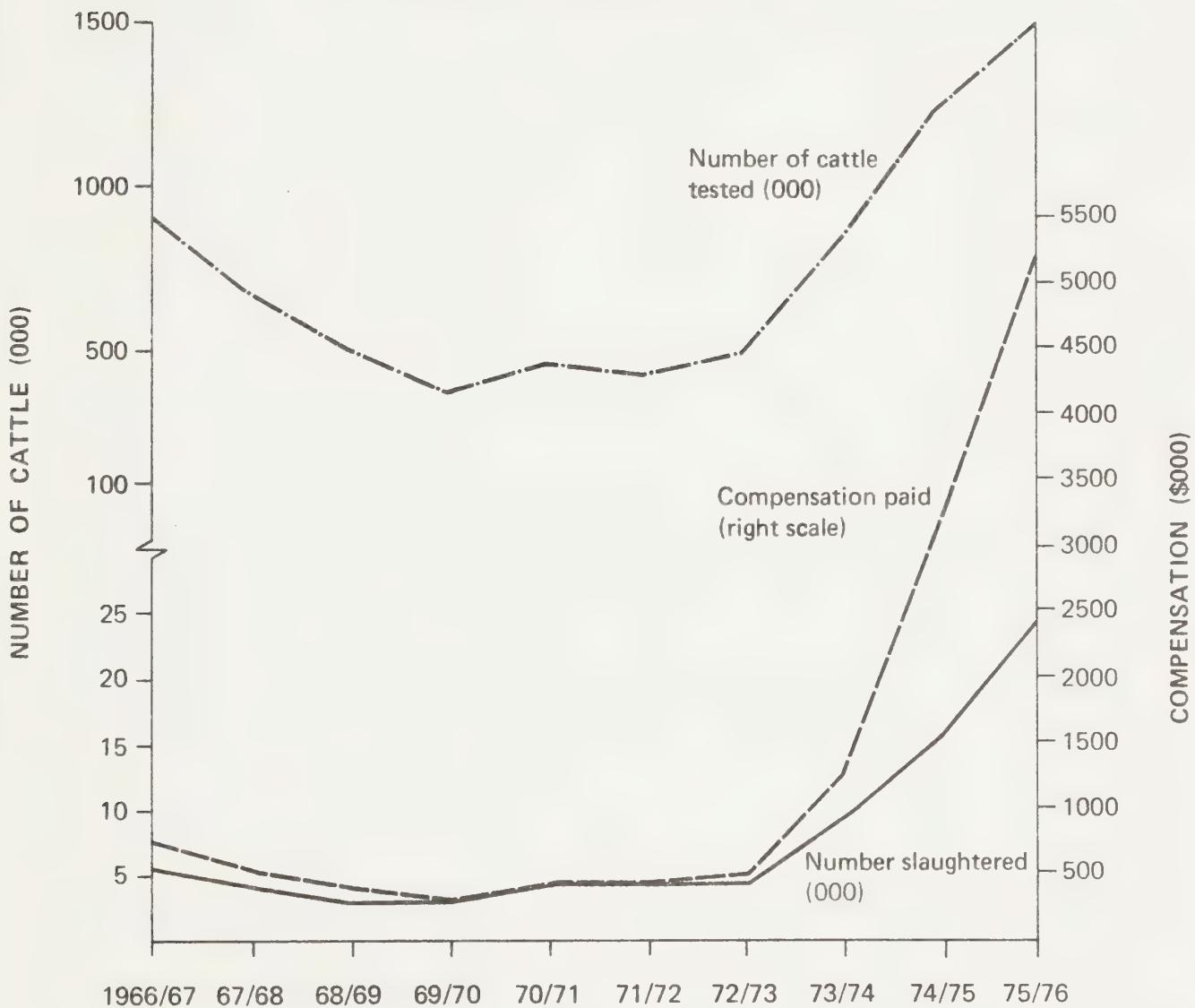
recent years, in an effort to gain producer acceptance of the need to destroy some of their animals for the general good. Although 1975/76 was not a particularly good year, no persistent trend can be found in the Table, which suggests that control measures have been successful in holding these diseases at a low level of incidence.

Turning to Figure 5, the picture appears to be less favorable. Slaughter of infected cattle fell by 58 percent from 1966 to the low level of 1969, but has risen sharply since 1973 to become a severe problem. Agriculture Canada has recognized the need for strong measures and has introduced strict control regulations which now (winter of 1976/77) appear to be taking effect as evidenced by a reduction in the number of quarantined herds. In gauging the effectiveness of the Government's disease control programs, it should be kept in mind that complete eradication is normally not feasible, either physically or economically, so that the goal is a more complex one of maintaining the incidence at tolerable levels and of quickly and effectively combatting those outbreaks which occur.

Agriculture Canada's commitment to protect the health of Canada's farm animals is also demonstrated by the data in Table 10, which shows that the number of federal veterinarians has been steadily increased in order to maintain a reasonably constant relationship between numbers of animals and the availability of qualified personnel.

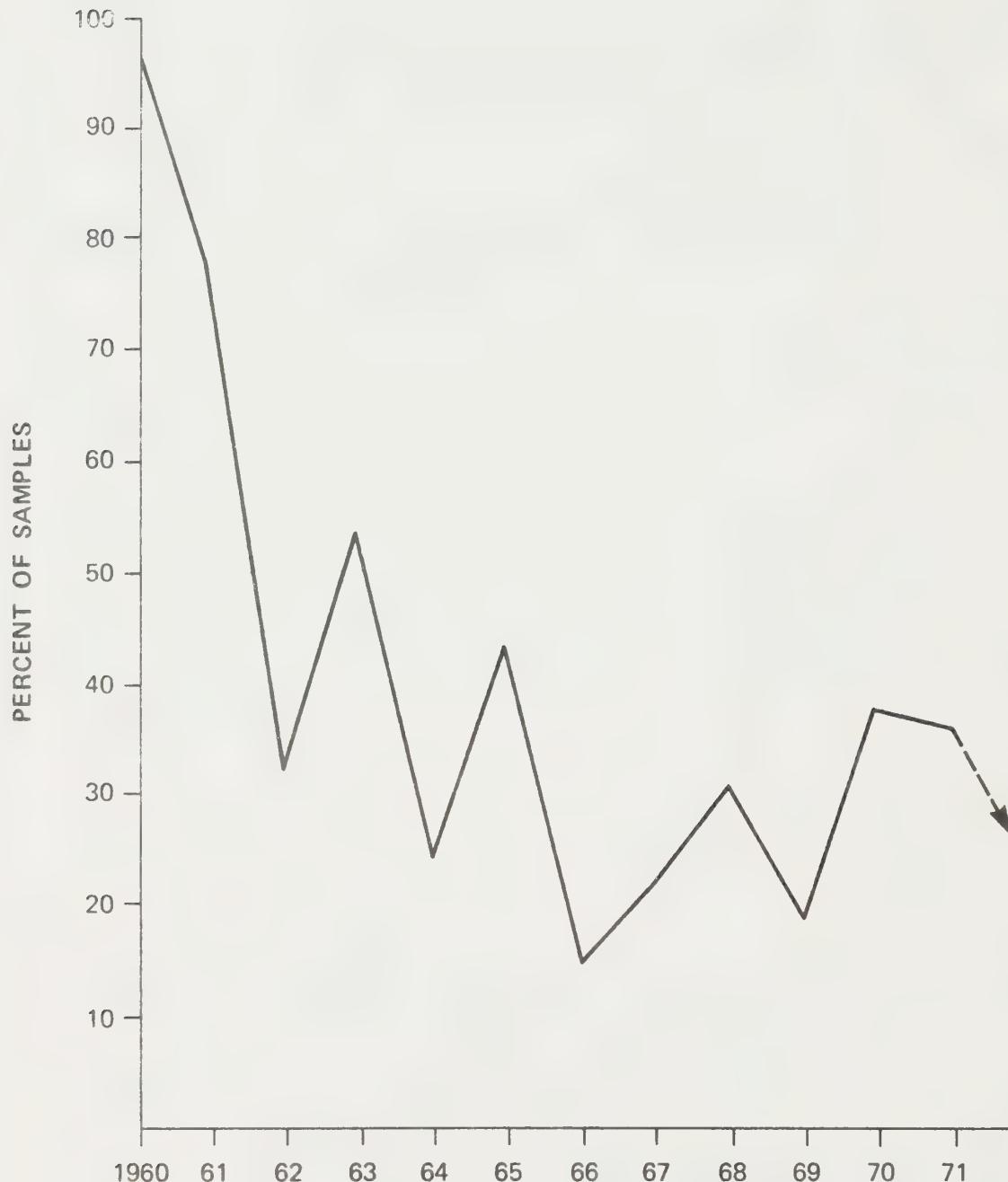
Progress in the identification and eradication of plant diseases can be monitored by examining movements in the levels of incidence of plant diseases over time. For example, Figure 6 shows a definite downward trend in the incidence of Tilletia controversa (a type of smut) in samples of pedigreed winter wheat grown in Ontario over the period 1960-71, and reveals the effectiveness of this particular program of fungus control since the incidence dropped from 100 percent of samples examined in 1960 to 36 percent in 1971. Subsequently, aerial photography showed that this disease had been almost totally eliminated.

FIGURE 5  
 NUMBER OF CATTLE TESTED FOR BRUCELLOSIS,  
 NUMBER SLAUGHTERED, COMPENSATION,  
 CANADA, 1966/67 to 1975/76



Source: Health of Animals Branch, Agriculture Canada.

FIGURE 6  
INCIDENCE OF TILLETTIA CONTROVERSA IN SAMPLES OF  
PEDIGREED WINTER WHEAT SEED GROWN IN ONTARIO, 1960 to 1971



Source: Wallen V.R. and A.B. Ednace, Prevalence, Distribution and Importance of Swart Bunt of Winter Wheat in Ontario 1970-71, Vol. 52, No. 2, Can. Plant Dis. Surv., June 1972.

Table 10 VETERINARIANS EMPLOYED BY AGRICULTURE CANADA AND SIZE OF NATIONAL LIVESTOCK HERD, CANADA, 1966/67 - 1975/76

Fiscal Years	No. of Veterinarians	Size of National Herd 000,000	No. of Animals Per Veterinarian 000
1966-67	465	24.9	53.6
1967-68	469	25.3	54.0
1968-69	508	24.5	48.2
1969-70	501	24.4	48.7
1970-71	502	26.3	52.4
1971-72	504	27.5	54.6
1972-73	520	27.4	52.7
1973-74	532	28.1	52.8
1974-75	550	28.7	52.2
1975-76	565	27.7	49.0

Source: Health of Animals Branch, Agriculture Canada.

Annual losses of wheat and barley from root rot range from 8 to 10 percent and from 12 to 16 percent respectively, which has prompted research designed to develop root-rot resistant varieties of cereal crops. Average annual loss to the oat crop in Prince Edward Island due to Septoria leaf spot fungus is estimated at 30 percent, and this has prompted a research program to develop pesticides and to breed more disease resistant oat plants. Losses to the white bean crop in southern Ontario from bacterial blight were reduced from 6 percent in 1970 to less than 1 percent in 1976 through the implementation of a blight eradication program in the pedigreed seed system.

Table 11 SEED STATISTICS, CANADA, 1950 TO 1976

<u>Hectares inspected for pedigreed seed</u>	<u>1950</u>	<u>1976</u>	<u>Increase 1976/1950</u>
Wheat	41,098	76,455	86
Barley	11,463	39,556	245
Oats	20,472	28,129	37
Rapeseed	0	6,077	-
Timothy	10	7,438	-
All seeds	89,240	246,900	177

<u>Pedigreed Seed Sealed for Planting (tonnes)</u>	<u>1950-51 AV.</u>	<u>1974-75 AV.</u>	
Cereals (barley equivalent)	51,571	106,370	106
Forage	1,367	9,845	620

Source: Production and Marketing Branch, Agriculture Canada.

A final indicator of the effort devoted to controlling plant diseases is the extent of seed inspection over time. These inspections ensure the quality of pedigreed seed, seeds producing high yields and which are more disease resistant. There is an ongoing program to inspect area to qualify seed as pedigreed and Table 11 summarizes the progress in this activity between 1950 and 1976. Area designated as suitable for producing pedigreed seed was expanded 86 percent, 245 percent and 177 percent respectively for wheat, barley and all seeds taken together. Pedigreed seed sealed for planting rose 106 percent and 620 percent between 1950/51 and 1974/75 for cereals and forage crops, respectively. (Table 1)

### 1.1.2 Efficient Marketing

An important instrumental goal of Agriculture Canada is the achievement of sustained improvements in the efficiency of those activities which convert farm products into final form and make them available to consumers. Figure 7 charts the movements in value added as a percentage of value of shipments of manufactured goods for Canada's major food processing industries. Viewed in isolation, this ratio provides a rather ambiguous indication of the direction of efficiency changes over time. If relative prices of purchased inputs and value-added inputs are fairly constant and if the characteristics of the processed product do not change, then a declining trend in this ratio implies an increase in the efficiency of the processing activity. Figure 7 supports the hypothesis that the efficiency of most food industries (bakeries, fruit and vegetable processing, poultry processing, meat packing and vegetable oil mills) has remained at about the same level since 1960, although sugar refiners and feed mills may have raised their productivity during the last ten years.

The inter-industry comparisons of this value-added ratio shown in Figure 8 emphasize the absence of any dramatic increases in the ratio which might be attributed to substantial declines in efficiency. The differences between the various industrial sectors are not great and the record of the food and beverage sector is quite similar to that for the average of all other industries.

Another aspect of efficiency in production and distribution may be assessed by examining changes in the spread between the retail price of food products and the prices of these products at the factory gate. Figure 9 shows the trends in the ratio of consumer to producer prices for meat, poultry, bread, butter and processed fruits and vegetables over the six years from 1970 to 1975. Over this period, the ratios for meat and poultry registered significant declines. This narrowing of the distribution margin for these two foods suggests that the distribution function was being performed with increasing efficiency. For the four other foods in Figure 9, there is no discernible trend. Distribution margins have remained almost constant for bread and for butter, while for processed fruits and processed vegetables they have fluctuated considerably but do not exhibit a clear trend.

Additional clues to the direction of changes in the efficiency of the processing and distributing sectors may be obtained by comparing the movements of key index at a highly aggregated level. Figure 10 shows that the index of farm input prices has risen continuously since 1971 while the farm output prices has declined since 1974. In contrast, there has been some widening of the margin between farm output prices and: (1) the price received by food and beverage manufacturers; (2) the prices paid by consumers, as reflected in the Consumer Price Index for food. Since this widening of processing and distributing margins has been relatively small, and since it has been accompanied by a continuation of the long-term trend towards greater convenience and sophistication in packaging, it can perhaps be interpreted as evidence that the level of efficiency in these sectors has been maintained over this period.

FIGURE 7  
VALUE ADDED (MFG) AS A PERCENTAGE OF VALUE OF OUTPUT,  
SELECTED FOOD MANUFACTURING INDUSTRIES,  
CANADA, 1961/63 to 1972/74

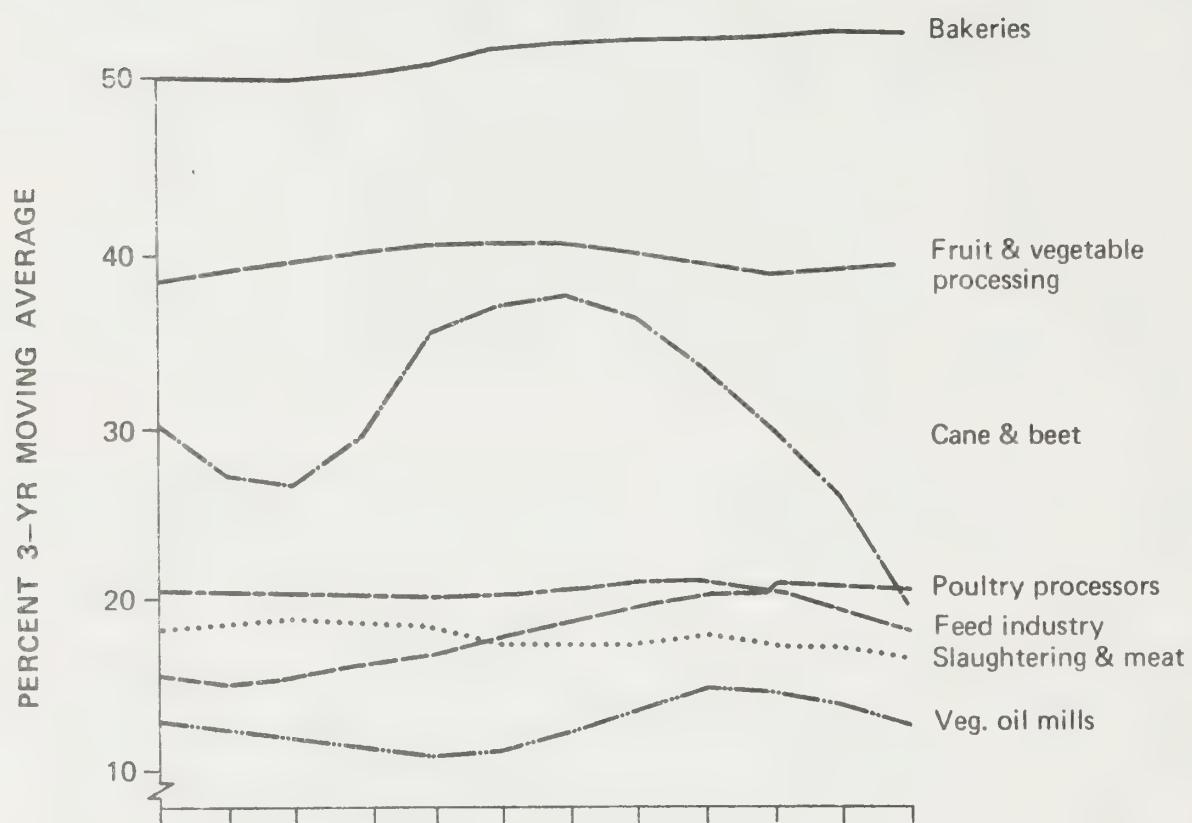
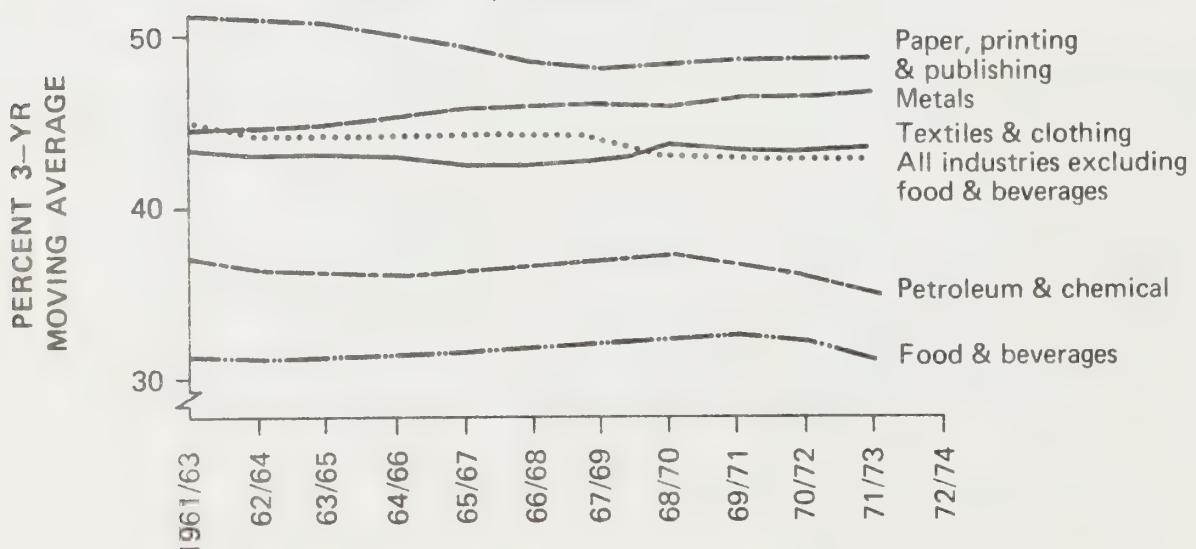
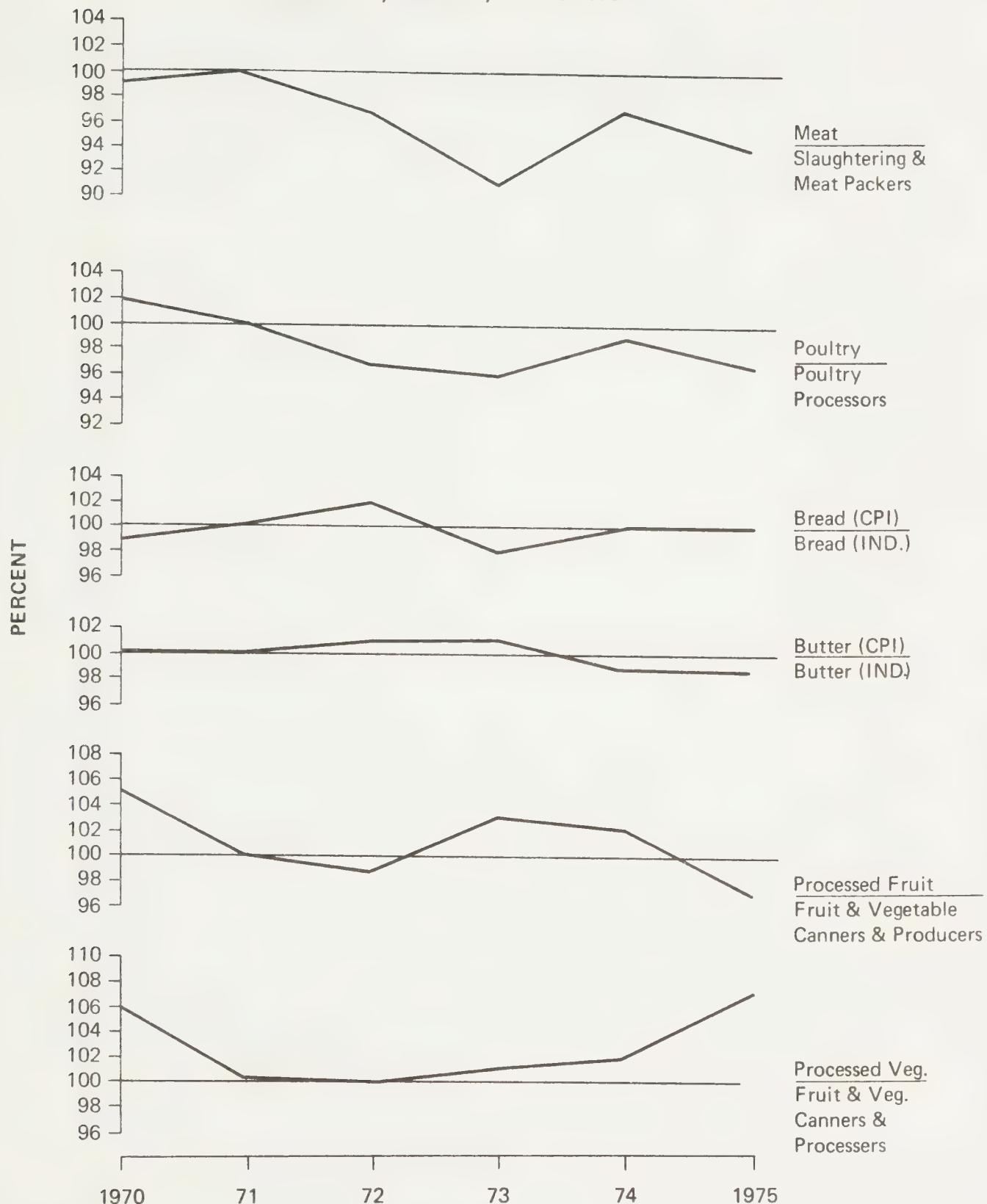


FIGURE 8  
VALUE ADDED (MFG) AS A PERCENTAGE OF VALUE  
OF OUTPUT, SELECTED MFG INDUSTRIES,  
CANADA, 1961/63 to 1972/74



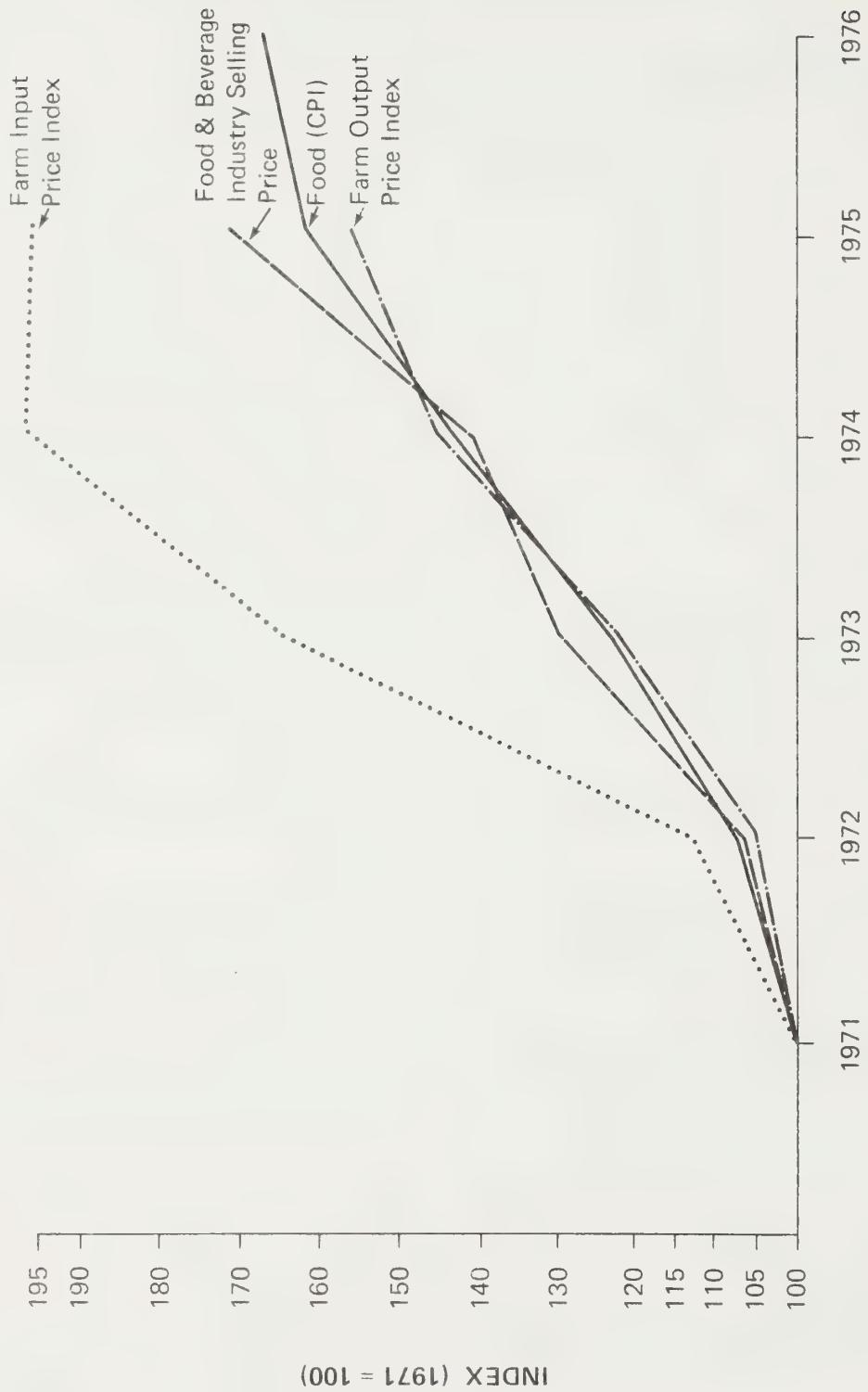
Source: Statistics Canada, Manufacturing Statistics (subgroups 31 & 32).

FIGURE 9  
RATIOS OF COMMODITY CPI TO INDUSTRY SELLING PRICE OF  
COMMODITY, CANADA, 1970 to 1975



Source: Statistics Canada, Cat. 62-010 and 62-011.

FIGURE 10  
AGGREGATE PRICE INDEXES FOR THE CANADIAN FOOD SYSTEM, 1971 to 1976



Source: Statistics Canada, Cat. 62-003, 62-004, 62-010 and 62-011.

### 1.1.3 Effective Resource Management

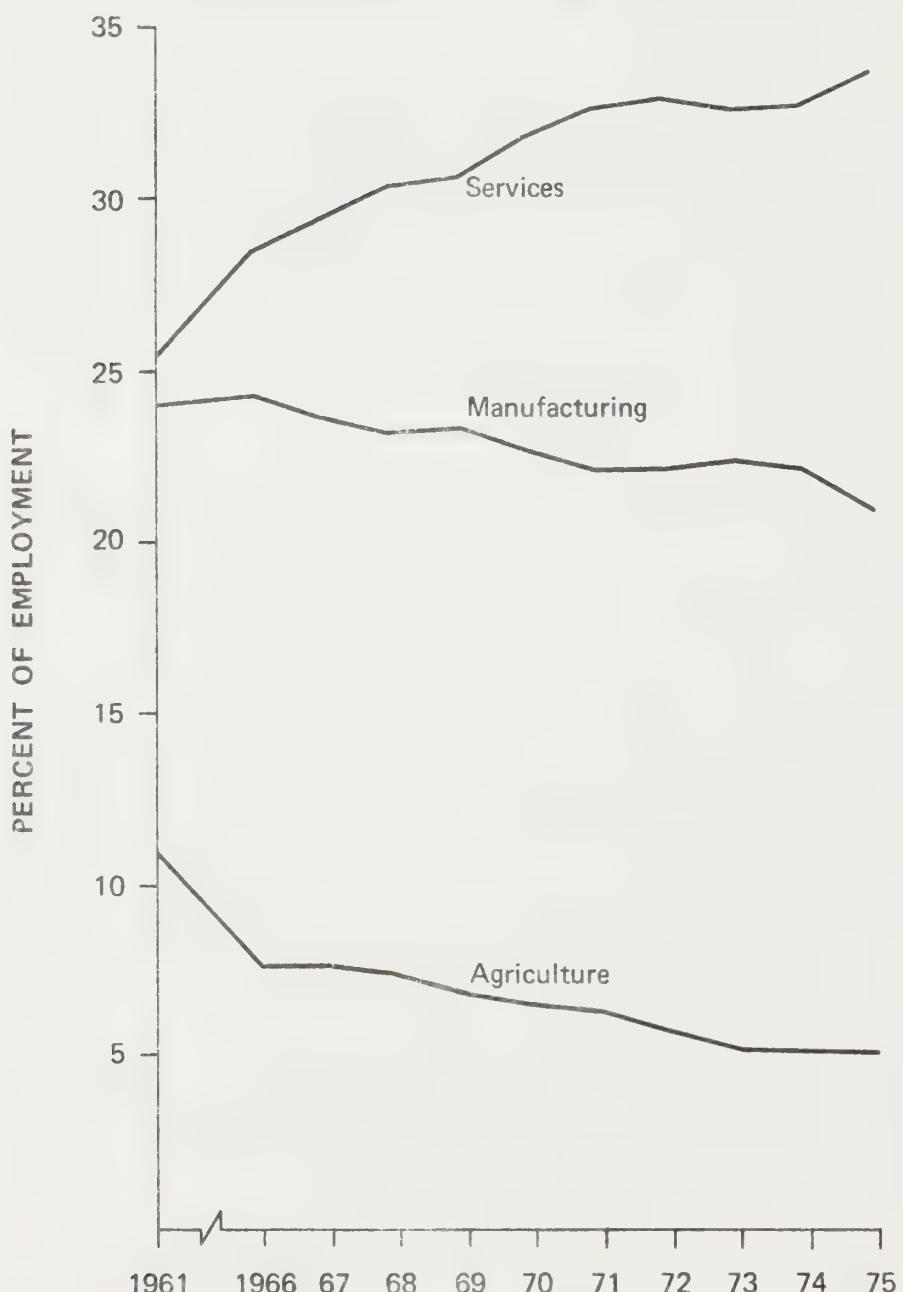
The extent to which this instrumental goal is being furthered should, at least partially, be revealed by examining the following performance indicators: shifts in employment by industry; changes in the wages of farm labour relative to wages in the commercial and industrial sectors; movements in the Farm Credit Corporation interest rate vis-a-vis changes in the prime lending rate of the chartered banks; trends in Agriculture Canada's assistance for land transfer and special credit facilities to consolidate farms and in government expenditures on counselling assistance to improve the management of small farms.

In the years from 1961 to 1976, agriculture's share of domestic employment declined substantially, in both absolute and proportional terms. Figure 11 shows this trend while also suggesting that the period of most severe decline has now ended. Agriculture's share of total employment declined sharply from over 11 percent in 1961 to just over 5 percent in 1973; and has since remained at that level. During this 16-year period, manufacturing's share of total employed decreased slightly while the share for services rose substantially and continues its upward trend. While labour employed in domestic agriculture decreased about 30 percent from 1961 to 1976, the earnings of Canadian farm operators more than tripled and, when expressed as a proportion of GNP, it declined from 7.4 percent in 1961 to 5.4 percent in 1976.

Since there is no single correct answer to the question of the optimal rate of intersectoral resource transfer in the face of changing market conditions, one cannot say that this very substantial exodus of labour resources from agriculture demonstrates the 'best' degree of flexibility. However, it does indicate that the system possesses the ability to adapt to very substantial changes in circumstances over a relatively short period of years.

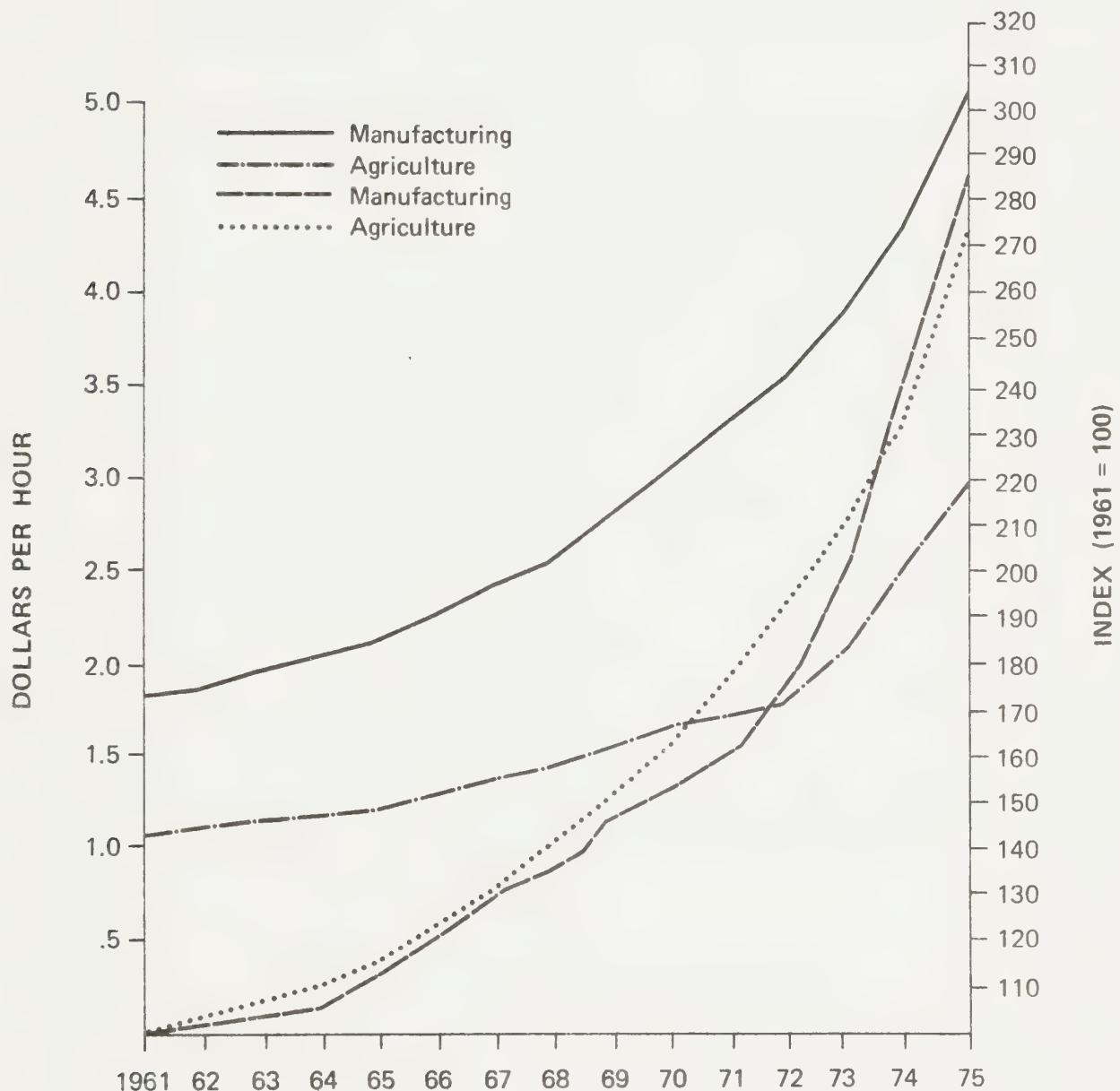
A likely result of extreme rigidity in intersectoral resource adjustment would be a widening over time of differences in the rate of return to factors in agriculture vis-a-vis comparable factors of production in the industrial sector of the economy as manufacturing employment expanded. While wage rates in agriculture have traditionally been lower than those in industrial occupations, most of this difference can be attributed to compensating aspects of farm employment such as lower living costs, provision of meals, a more individual pace of work, more varied tasks and a healthier environment. Figure 12 sets out changes in average hourly wage rates on farms and in manufacturing industries since 1961, along with the associated index numbers. It shows that the traditional differential referred to above has changed only slightly (some narrowing has occurred lately) during these 15 years. Since nominal industrial wage rates have approximately tripled over this period, it appears that intersectoral movement of labour resources has taken place fast enough to preserve approximate equality between the value of labour inputs in these two very different sectors of the economy.

FIGURE 11  
PERCENTAGE OF TOTAL EMPLOYMENT ACCOUNTED FOR  
BY AGRICULTURE, MANUFACTURING AND SERVICES,  
CANADA, SELECTED YEARS, 1961 to 1975



Sources: (1) Agriculture Canada, Selected Agricultural Statistics for Canada, Pub. 76/10.  
(2) Statistics Canada, Cat. 71-001.

FIGURE 12  
 MANUFACTURING INDUSTRIES AND FARM\* WAGE RATES  
 AND INDEXES, CANADA, 1961 to 1975



\* As at August 15 (without board).

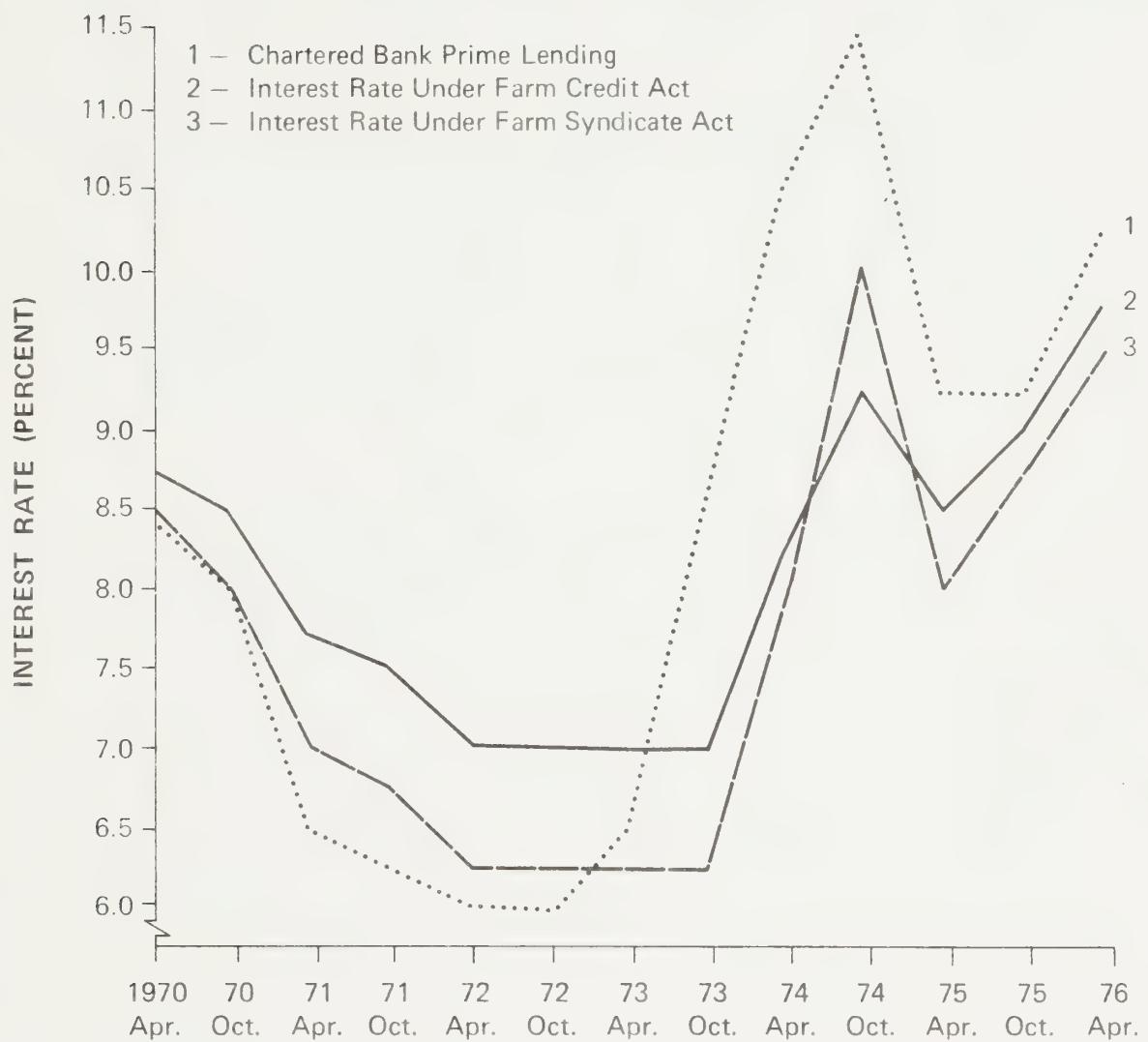
Sources: Statistics Canada, Cat. 21-003, 72-002 and 72-202.

The provision of adequate amounts of debt capital to the agricultural sector is supported by a federal commitment, through the Farm Credit Corporation (FCC), to offer financial assistance on reasonable terms and conditions. With this assurance of unimpeded capital inflow, any evidence of inflexibility could be expected to appear on the outflow side and would indicate that excess amounts of capital are locked-in in the agricultural sector. Were this the case, the marginal rate of return to capital in agricultural uses would almost certainly decline, and the inability of agricultural uses to compete for funds would be reflected either by a widening differential between FCC rates and commercial rates, or by declines in the flow of funds to the agricultural sector.

Figure 13 compares movements in the interest rates charged under the Farm Credit Act and the Farm Syndicate Act with the prime rate charged by Canadian chartered banks, over the period 1970 to 1977. The graph indicates that the rates on agricultural loans, although fluctuating within a narrower range, have generally moved in parallel with the commercial bank lending rate, and that there has been no discernible trend in the spread between them. Turning to Figure 14, it can be seen that there has been a very substantial injection of new funds into the agricultural sector over this same recent period, with loan disbursements under the Farm Credit Act increasing by a factor of three. Although this increase would be somewhat lower if expressed in real terms, it nonetheless provides evidence of considerable flexibility in the intersectoral flow of capital resources.

Federal programs of financial assistance on land transfers and special credits for farm consolidation and expansion exemplify Government efforts to facilitate the re-allocation of land resources within agriculture, and between agricultural and non-agricultural uses. The numbers of such transactions along with their dollar value, give some indication of the probable impact of these programs. Table 12 sets out this information with respect to vendor grants for the sale of farmland to assist marginal operators to withdraw from farming, as well as special credit for farm expansion through land and capital equipment acquisition. The Table shows that the number of land transactions assisted by vendor grants since the beginning of the program have exceeded 6,200, involving total expenditures of over \$19 million. The average amounts of individual grants and credits have approximated \$3,000 and \$17,000 respectively.

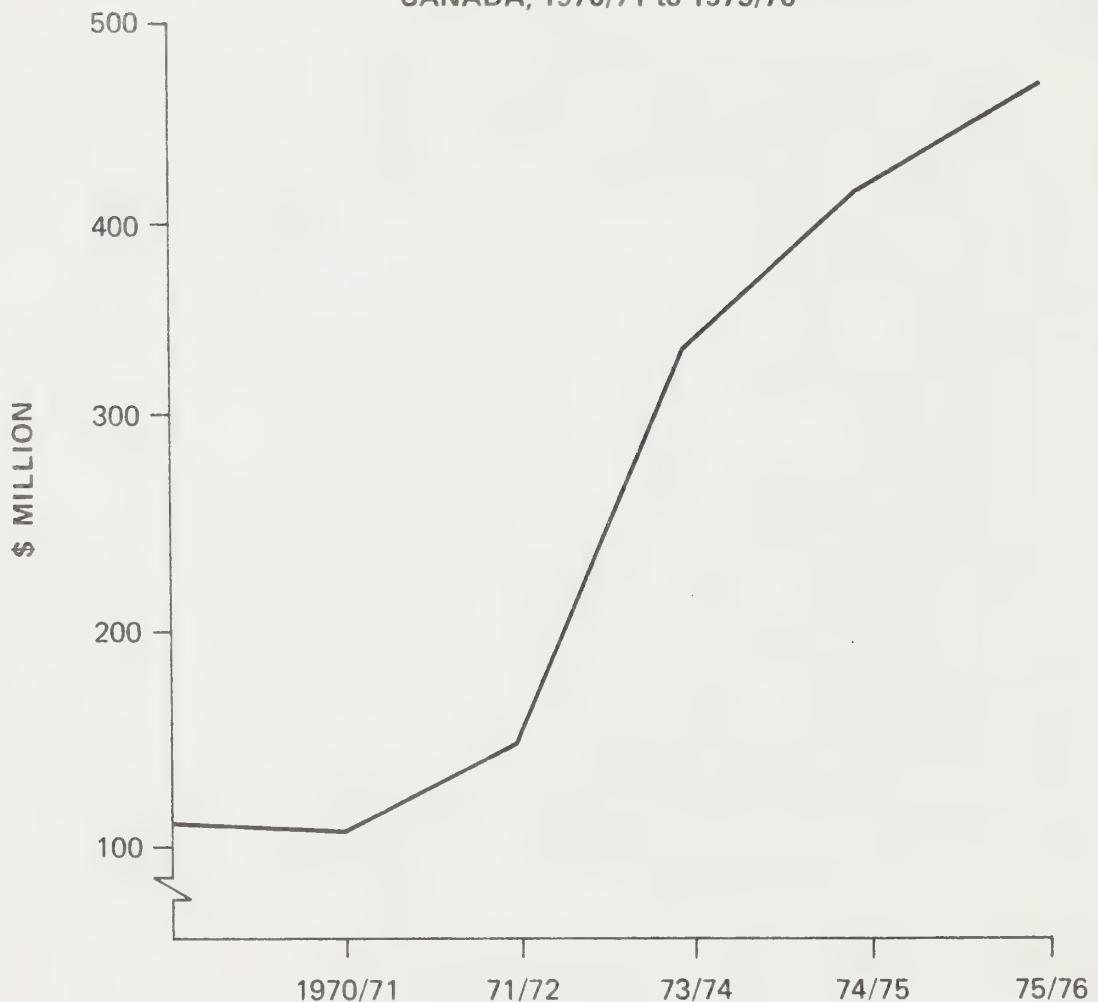
FIGURE 13  
 FARM CREDIT CORPORATION INTEREST RATES VERSUS  
 CHARTERED BANK LENDING RATES,  
 CANADA, 1970 to 1976



Sources: (1) Bank of Canada Reviews.

(2) Farm Credit Corporation, Federal Farm Credit Statistics, 1976.

FIGURE 14  
LOAN DISBURSEMENT UNDER THE FARM CREDIT ACT,  
CANADA, 1970/71 to 1975/76



Source: Farm Credit Corporation, Federal Farm Credit Statistics, 1976.

Table 12 GRANTS & SPECIAL CREDIT APPROVALS UNDER THE LAND TRANSFER PLAN, CANADA, 1972/73 TO 1976/77

Fiscal Year	GRANTS			SPECIAL CREDIT		
	No.	Value	Av. Grant	No.	Value	Av. Credit
		\$000	\$		\$000	\$
1972-73	257	700	2,725	61	1,005	16,480
1973-74	1,778	5,369	3,020	250	4,315	17,261
1974-75	2,016	6,100	3,025	245	4,753	17,358
1975-76	1,475	4,568	3,097	104	1,783	17,144
1976-77	736	2,345	3,186	32	569	17,769

Source: Farm Credit Corporation, Annual Reports.

Table 13 SMALL FARM DEVELOPMENT PROGRAM COUNSELLING SERVICES, BY PROVINCE, CANADA, 1974-1976

Province	Counselling Sessions (1974-1976)	New Clients (1974-76)	Counsellors on Staff Dec., 1976
- number -			
British Columbia	1,521	639	9
Alberta	11,539	3,702	13
Manitoba	4,809	1,678	10
New Brunswick	110	94	3
Prince Edward Island	4,934	1,088	7
Total	22,913	7,201 <sup>a</sup>	42

<sup>a</sup>Estimates based on incomplete field statistics.

Source: Economics Branch, Agriculture Canada.

Agriculture Canada also assists in upgrading the skills of farm managers through counselling services offered under the Small Farm Development Program. Table 13 reveals the magnitude of this effort, which is carried out by field staff in close cooperation with the various provincial departments of agriculture. Client profiles developed by program staff have shown that this assistance is mainly provided to farm operators at the lower end of the farm income and farm size classes, and is therefore concentrated on those farmers who would otherwise face the greatest difficulties in reaching and implementing optimal decisions respecting the utilization of their resources.

A specific issue of vital concern in the area of effective resource management is that of proper land use. The government has committed itself to assuring that the nation maintains an adequate supply of agricultural land. An indication of success in achieving this goal is provided by changes in the availability of the various classes of arable land. Table 14 summarizes changes in farm area and in improved farm land for selected years since 1941. It reveals small increases in both these measures during those thirty years. The numbers are for Canada as a whole and mark wide variations between the regions as indicated in Figure 15. This shows that British Columbia and the Prairie Provinces experienced large increases in farmland area between 1931 and 1971, while Ontario and Québec recorded declines and there was a very substantial reduction of improved farmland in the Atlantic region.

Changes over time in the area of irrigated land are set out in Table 15 for Canada and eight of the provinces. The large increases indicate the government's increased commitment to this method of improving soil productivity. Reported irrigated area in Canada rose 36 percent between 1950 and 1960 and an additional 23 percent between 1960 and 1970. The largest of these irrigation projects have been constructed in Western Canada.

#### 1.1.4 Market Development

The value of agricultural exports as a percentage of total Canadian exports is shown in the upper curve of Figure 16. Exports of agricultural products accounted for just under 20 percent of total exports from 1958 to 1965, dropped to about 10 percent from 1965-70, and have since risen to the present level of 12 percent. The lower curve in Figure 16 shows a similar ratio between exports and all exports, but this time excluding grains. This curve is much flatter, although still on a declining trend. Comparison of these two curves suggests that both the steep decline and the recent modest recovery in the ratio of all agricultural exports originated in the grains subsector. This observation is confirmed by examining the relative changes in exports of the various commodity groups, expressed as proportions of all agricultural exports. This is done in Figure 17, and shows wide swings in the relative value of grain and oilseed exports, as compared with those of

Table 14 TOTAL FARM LAND AND IMPROVED FARM LAND, CANADA, CENSUS YEARS  
1941 TO 1971

Year	Total Farm Land	Improved <sup>a</sup> Land	Increase in farm land over previous date	Increase in improved land over previous date
- 000 hectares -				
1941 <sup>b</sup>	60,542	36,654	n.a.	n.a.
1951	60,530	38,741	0.1	5.7
1956	n.a.	40,130	-	3.6
1961	62,146	41,361	2.7	3.1
1966		43,262	-	4.6
1971	63,286	43,260	1.8	0.1

<sup>a</sup> Improved land includes a category enumerated as "other improved land" as well as "crops", "fallow" and "pasture". Other improved land includes barnyards, homegardens, and roads on farms, new breaking and improving land lying idle.

<sup>b</sup> Excludes Newfoundland, Yukon and N.W.T.

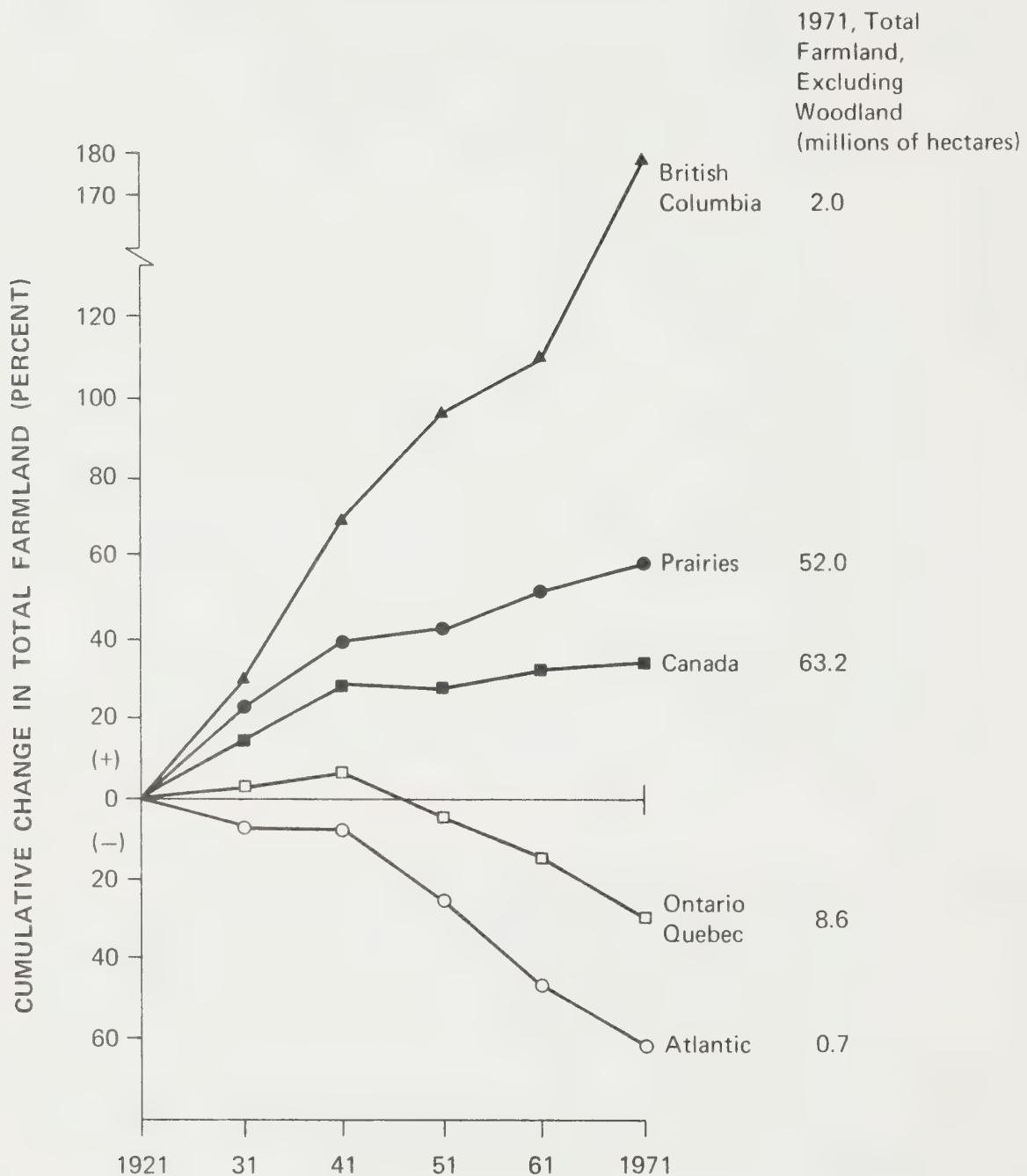
Source: Agriculture Canada, Selected Agricultural Statistics for Canada, Pub. 76/10.

Table 15 IRRIGATED LAND, BY PROVINCE, CANADA, 1950, 1960 & 1971

	1950	1960	1970	Increase 1970/1950
- hectares -				
Saskatchewan	14,999	19,613	30,996	106.6
Alberta	178,813	217,172	214,928	20.2
British Columbia	55,353	70,778	88,395	59.7
Ontario	n.a.	32,267	39,789	23.3
Manitoba	n.a.	n.a.	2,932	
Nova Scotia	n.a.	n.a.	746	
New Brunswick	n.a.	n.a.	1,251	
Québec	n.a.	n.a.	37,158	
Canada	249,165	339,830	416,195	67.1

Source: Statistics Canada, Census of Agriculture, 1951, 1961, 1971.

FIGURE 15  
CHANGE OF TOTAL FARMLAND (EXCLUDING WOODLAND) BY REGION,  
CANADA, 1921 to 1971



Source: Agriculture Canada Committee on Land Use, Agricultural Land Use in Canada, 1975.

FIGURE 16  
VALUE OF AGRICULTURAL EXPORTS AS A PERCENT OF TOTAL EXPORTS,  
CANADA, 1958/60 to 1973/75 (3-YR MOVING AVERAGE)

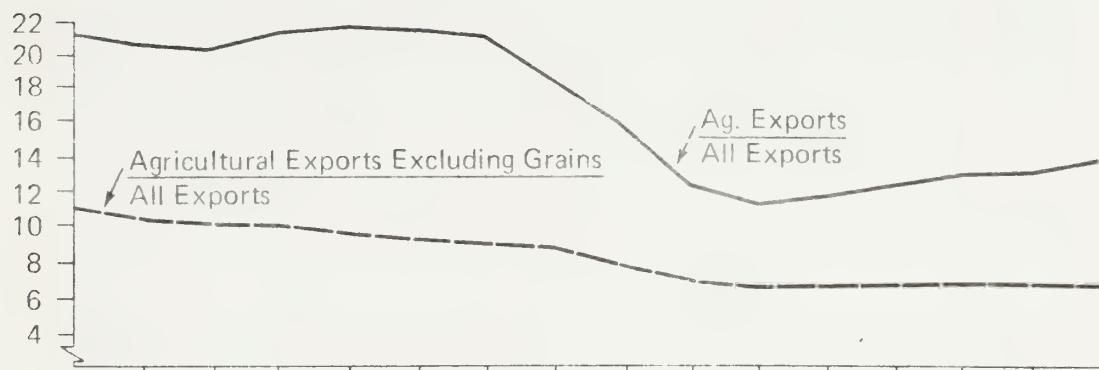
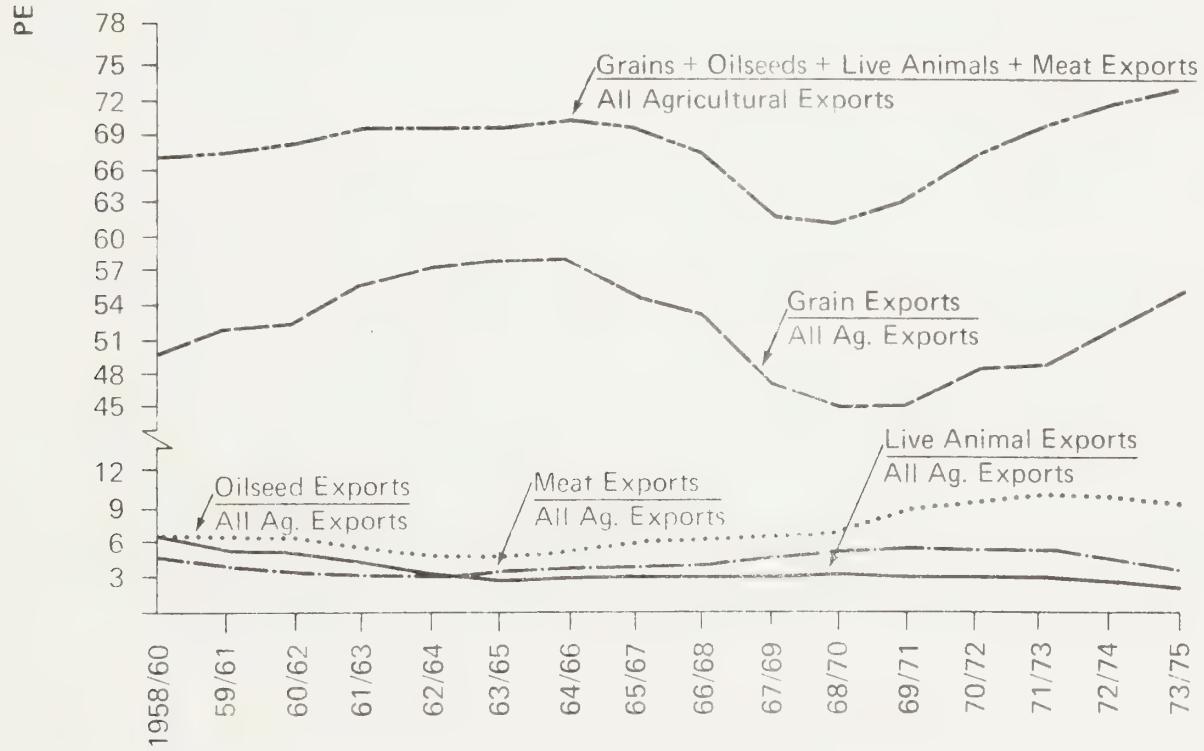


FIGURE 17  
RELATIVE GROWTH OF VALUE OF AGRICULTURAL EXPORTS,  
CANADA, 1958 to 1975 (3-YR MOVING AVERAGE)



Source: Statistics Canada, Cat. 65-20.

meat and live animals. When graphed as a three-year moving average, the exports of the oilseed subsector are seen to have followed a slow and steadily increasing trend since about 1962.

It is pertinent to enquire to what extent these swings in the relative value of exports are accounted for by price changes as against fluctuations in the volume of shipments. Figure 18 traces changes in the indexes for export and import volumes of all commodities from 1970 to 1975, showing that while the volume of imports has been increasing fairly steadily, the volume of exports suffered a very severe drop from 1972 to 1974. Turning to Figure 19, it can be seen that the most serious declines in volume have been in commodities other than grains and oilseeds. Excluding these two categories, the recent trade performance in the other subsectors of agriculture has not been good. Export volumes have fallen very sharply since 1973, while import volumes have continued to increase.

One area of special concern is the growing deficit in Canada's trade in horticulture products (fruits, nuts and vegetables). This deficit has more than doubled in the last five years, rising from \$321 million in 1970 to \$665 million in 1975. Figure 20 reveals that the deficit is due mainly to a steady increase in the volume of imports, accompanied by some decline in the volume of exports, especially of fruits.

An integrated part of the overall plan for developing the markets for agricultural products is the government's policy of increasing the nation's capacity to process domestic raw materials into final consumer goods. Performance indicators which are useful in assessing the progress towards this goal include: (1) movements in indexes of real domestic product for selected agricultural end product industries; (2) the growth of primary production vs. processing industries; (3) the ratio of net imports to domestic production of agricultural end products, and (4) imports as a percentage of domestic consumption of agricultural end products.

Figure 21 traces the movement of indexes of Real Domestic Product (RDP) for the major food processing industries from 1961 to 1975. The figure includes an index of population change to show the expansion which would be required to simply keep pace with domestic demand. While all indexes increased to some extent over the period, the rate of increase for processing of bakery and dairy products has been barely sufficient to parallel the rate of population change. On the other hand, grain milling has risen very sharply while the indexes for meat production and for food and beverage manufacturing have exceeded the rate of population increase. In percentage terms, the changes from 1961 to 1975 have been: population - 25 percent, bakery products - 16 percent, dairy products - 43 percent, meat packing - 56 percent, food and beverage manufacturing - 67 percent, grain milling - 180 percent.

FIGURE 18  
VOLUME INDEXES OF CANADIAN AGRICULTURAL TRADE,  
ALL COMMODITIES, 1970 to 1975

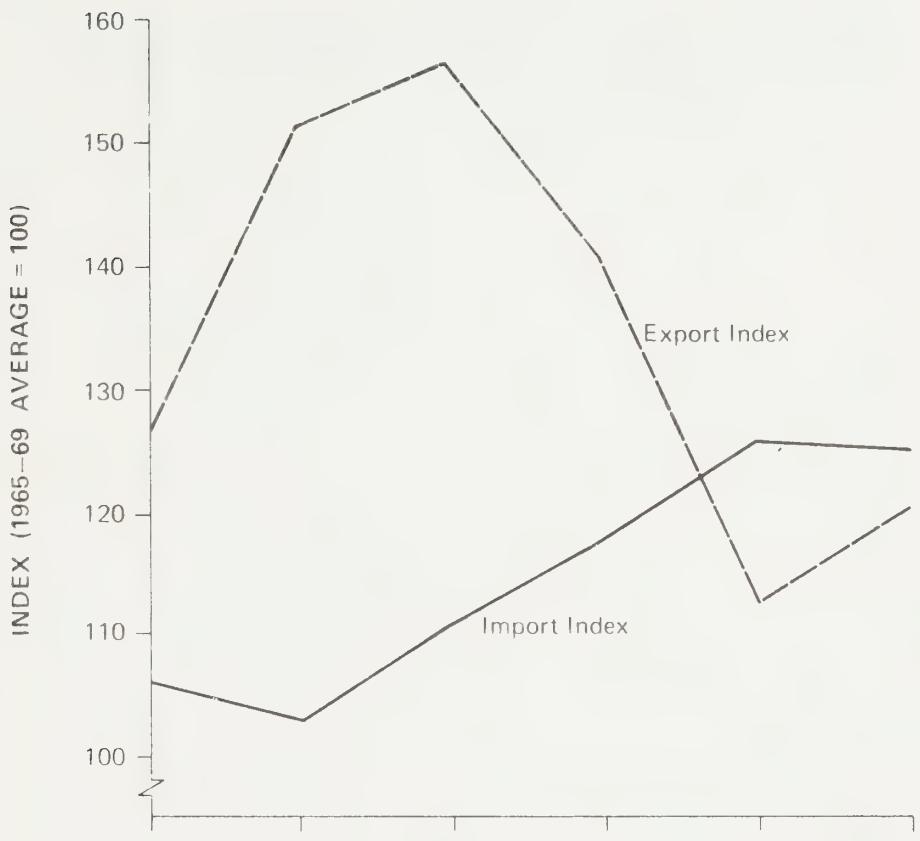
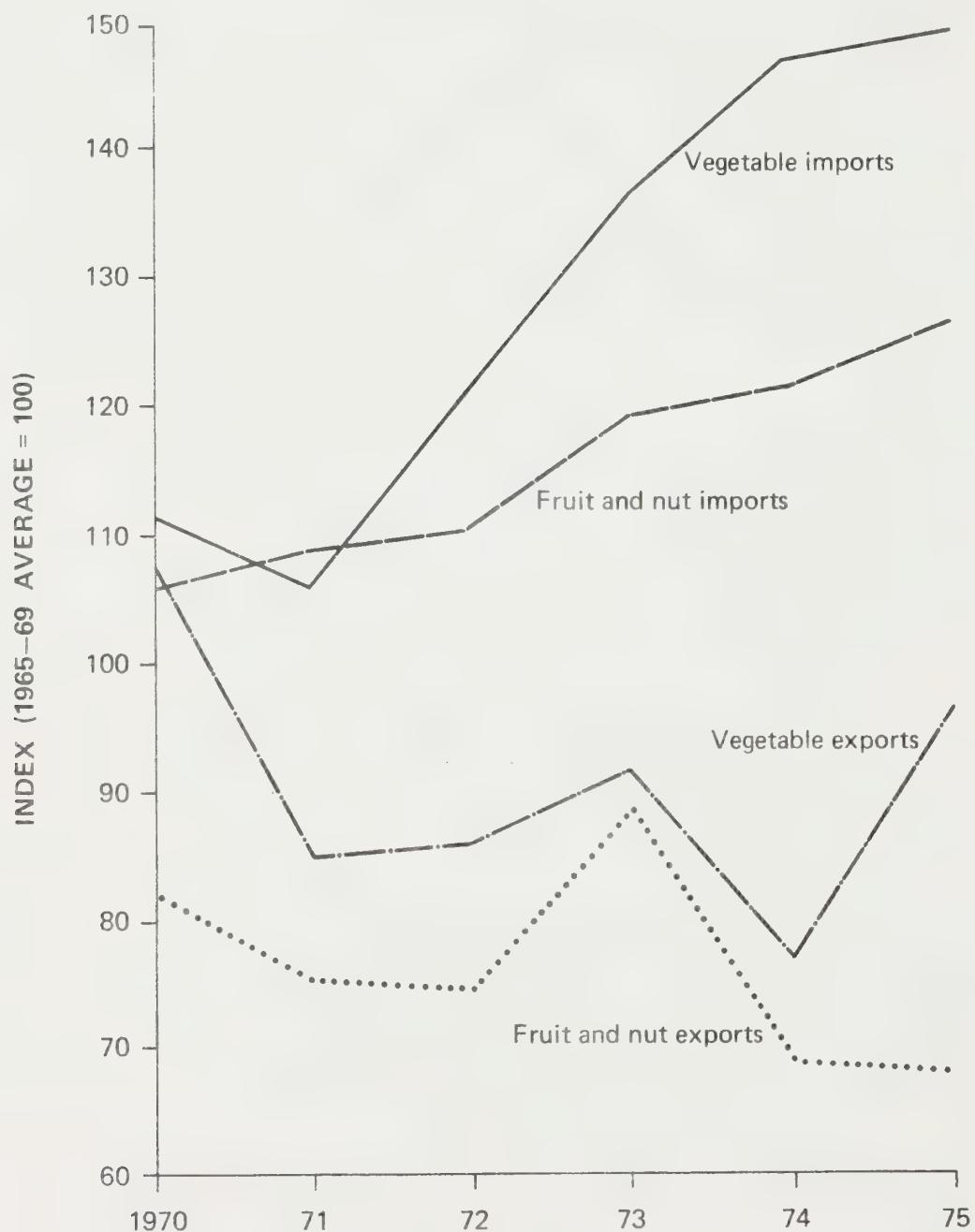


FIGURE 19  
VOLUME INDEXES OF CANADIAN AGRICULTURAL TRADE,  
EXCLUDING GRAINS AND OILSEEDS, 1970 to 1975

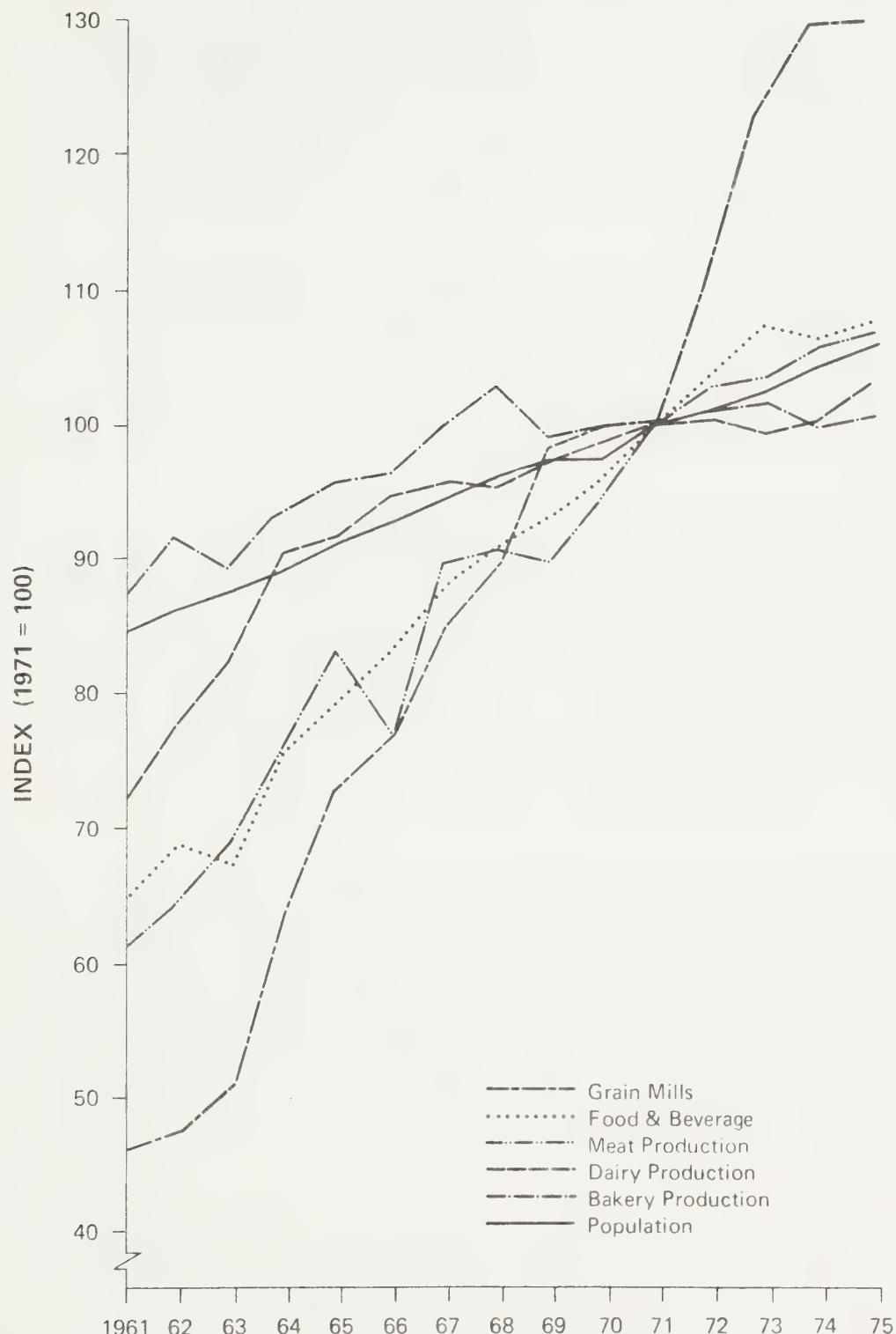


FIGURE 20  
VOLUME INDEXES OF CANADIAN IMPORTS AND  
EXPORTS OF HORTICULTURE PRODUCTS, 1970 to 1975



Source: Statistics Canada, Cat. 65-001.

FIGURE 21

INDEX OF REAL DOMESTIC PRODUCT FOR SELECTED FOOD INDUSTRIES,  
CANADA, 1961 to 1975

Source: Statistics Canada, Cat. 61-005.

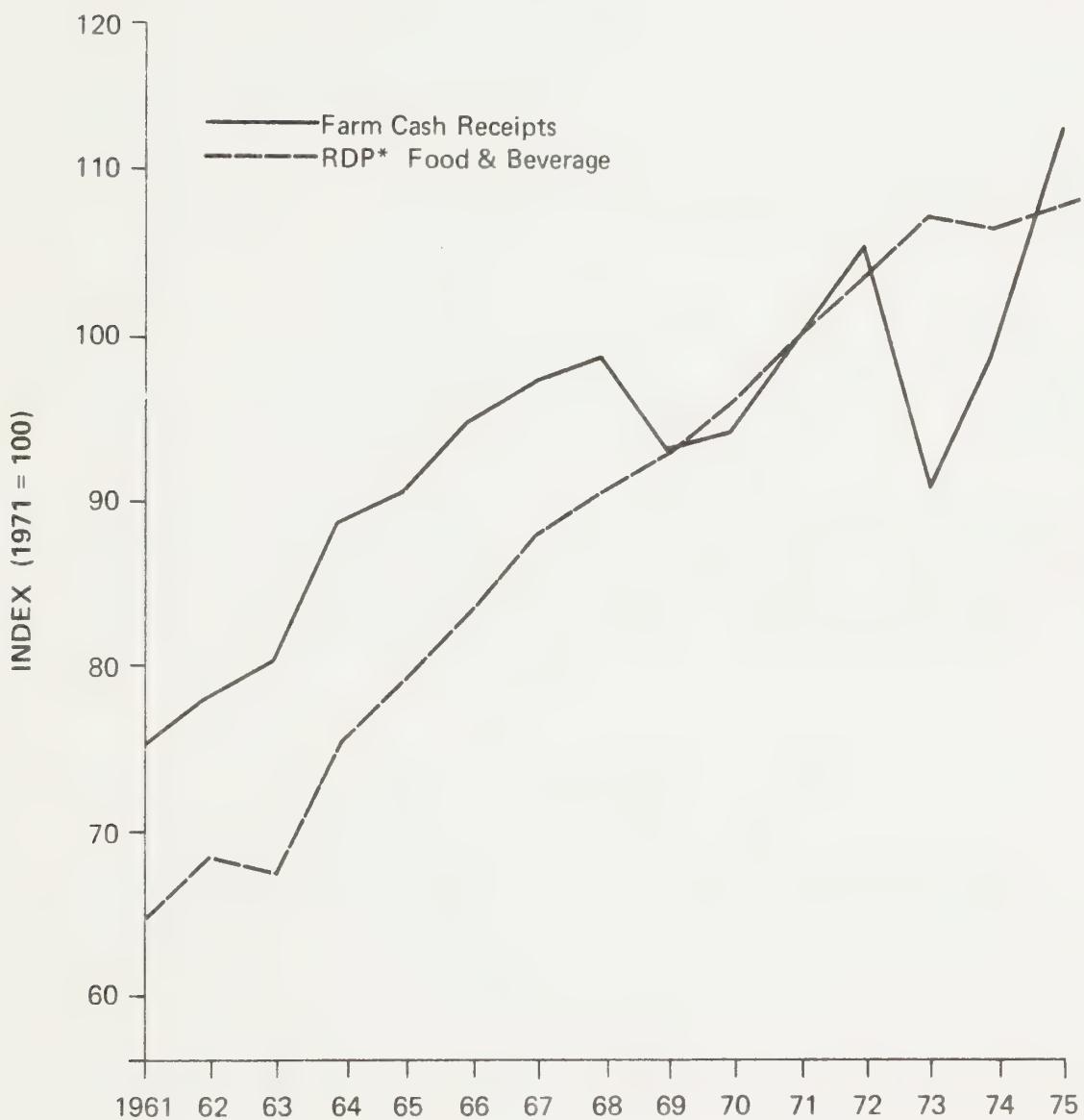
The combination of a low value-to-weight ratio with the relative perishability which characterizes most dairy products and bakery goods means that the processing of these foods is, in general, supply-oriented. While Canada should continue to expand these industries in line with domestic demand, the best opportunities to replace imports and to expand exports are likely to be found in the kinds of manufactured foods which exhibit high ratios of value to weight or volume and which can be readily shipped and stored. With this in mind, it is worth noting that the expansion of meat processing and of food and beverage manufacturing have slowed markedly in the last two or three years. While this undoubtedly is related to widespread sluggishness in global economic conditions, it emphasizes the need for Canadian policies which will encourage a resumption of satisfactory growth in these sectors.

Figure 22 compares the index of RDP in food and beverage manufacturing with that for farm cash receipts (in 1971 dollars) over the period 1961-76. This comparison suggests that value added in food manufacturing grew at a somewhat faster pace over the entire period than did the real value of primary agricultural output (69 percent vs. 57 percent). However, it also shows that there has been only small growth in the food and beverage sector since about 1972.

Net imports of a number of important food commodities are expressed as percentages of domestic consumption in the curves plotted in Figure 23. In this form, they indicate the extent to which Canada has succeeded in meeting her needs for these commodities through import substitution. The record is unambiguously favourable only for cheese, in which Canada's net imports amounted to about 55 percent of domestic consumption in 1961, but have now fallen to just over 30 percent. While net imports of poultry have been held to a small fraction of domestic consumption, Canada has not been able to maintain the position as a net exporter which was achieved in 1970. While most of the nation's supply of mutton is imported, it is worth noting that the total volume of Canadian consumption is less than three percent of that for beef.

Net imports of beef were negligible until 1972 with Canada being a net exporter during most of the sixties. Since 1972 Canada's net beef imports have risen to the equivalent of about seven percent of domestic consumption. Imports, particularly of Oceanic beef, rose in 1976 to levels which endangered the recovery of the depressed North American beef market and triggered import restrictions. From 1961 to 1971, the nation was self-sufficient in butter, exporting substantial quantities from 1963 to 1965. By 1973, the situation had reversed but since then domestic demand for butter has diminished, production has been adjusted to a target of complete self-sufficiency, and imports have dropped to negligible levels.

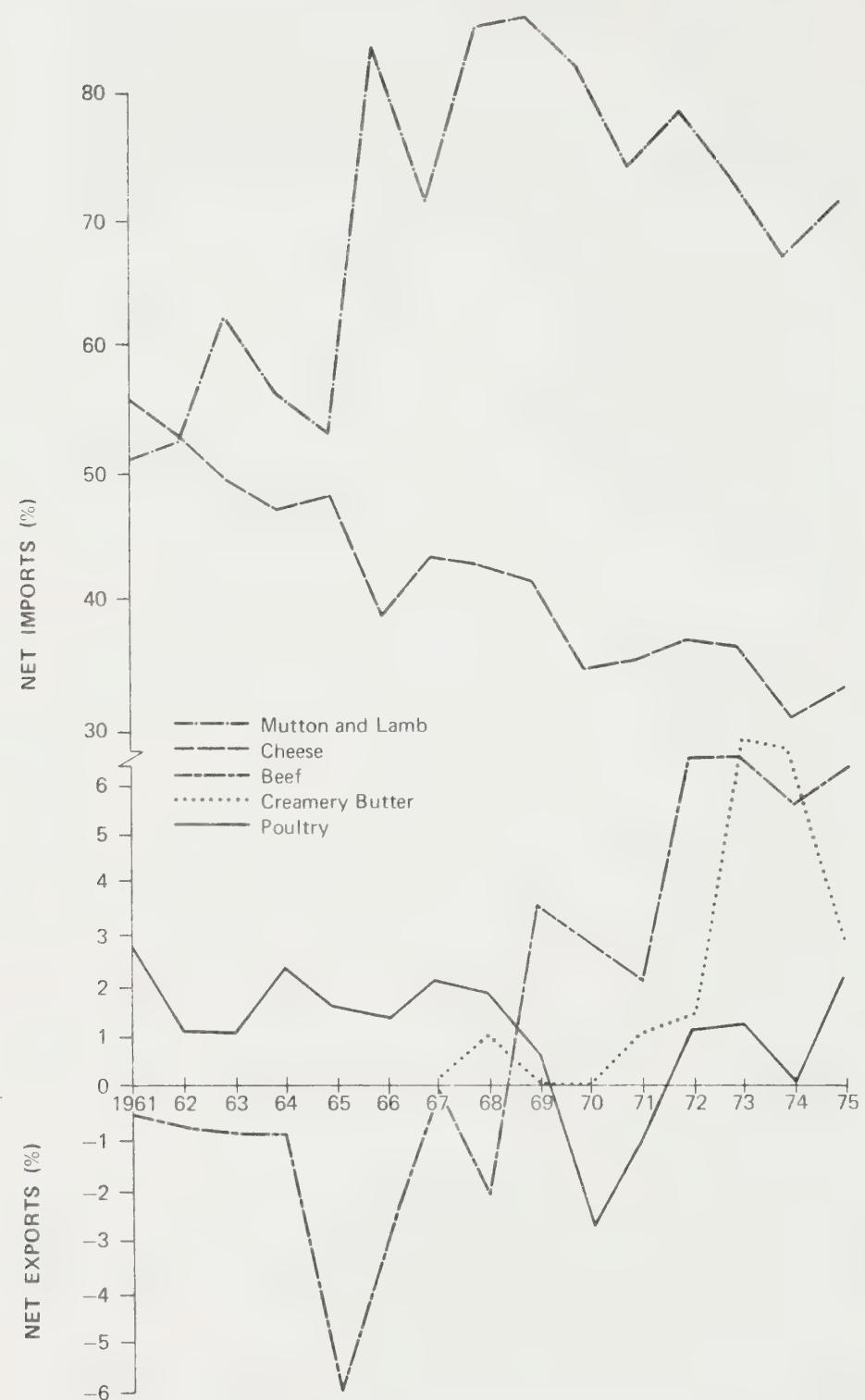
FIGURE 22  
COMPARATIVE GROWTH IN INDEXES OF RDP FOR FOOD AND  
BEVERAGES AND OF FARM CASH RECEIPTS, CANADA, 1961 to 1975



\* Real Domestic Product.

Source: Statistics Canada, Cat. 21-001 and 62-003.

FIGURE 23  
NET IMPORTS AS PERCENTAGE OF DOMESTIC CONSUMPTION,  
CANADA, 1961 to 1975



Sources: (1) Agriculture Canada, Canada's Trade in Agricultural Products, Pub. 76/8.  
(2) Agriculture Canada, Handbook of Food Expenditures, Prices and Consumption, Pub. 76/5.

### 1.1.5 Effective Food and Technical Aid

Resources allocated to programs of international assistance, both in absolute terms and as a percentage of GNP, indicate the degree to which Canada is pursuing its announced aims of providing reasonable volumes of foodstuffs to the developing world in the light of its own production capacity and supply situation and of assisting the developing world to become more self-sufficient in food production.

While the lower curves in Figure 24 show that the value of shipments of international food aid in 1975/76 was 223 percent greater than in 1968/69, they also reveal that this absolute increase represents a virtually constant proportion of domestic GNP. Canada's efforts in this respect can therefore be regarded as adequate only if one is prepared to defend an expenditure level of one-tenth of one percent as being an appropriate national commitment to this need.

On the other hand, the upper curves of Figure 24 show that Canada's efforts in the area of technical assistance have increased very substantially over the last seven years. In absolute terms, the increase has been 468 percent, from less than \$120 million to \$681 million, representing 0.4 percent of GNP as compared with less than 0.2 percent in 1968 to 1969.

In recent years, there has been considerable evidence in support of the view that shipments of food aid to less developed nations, while necessary to meet temporary emergencies, are counter-productive in terms of long-run efforts to raise their level of agricultural self-sufficiency. If one accepts this view, the obvious Canadian emphasis on the provision of technical assistance may well be in the best interests of the recipient countries.

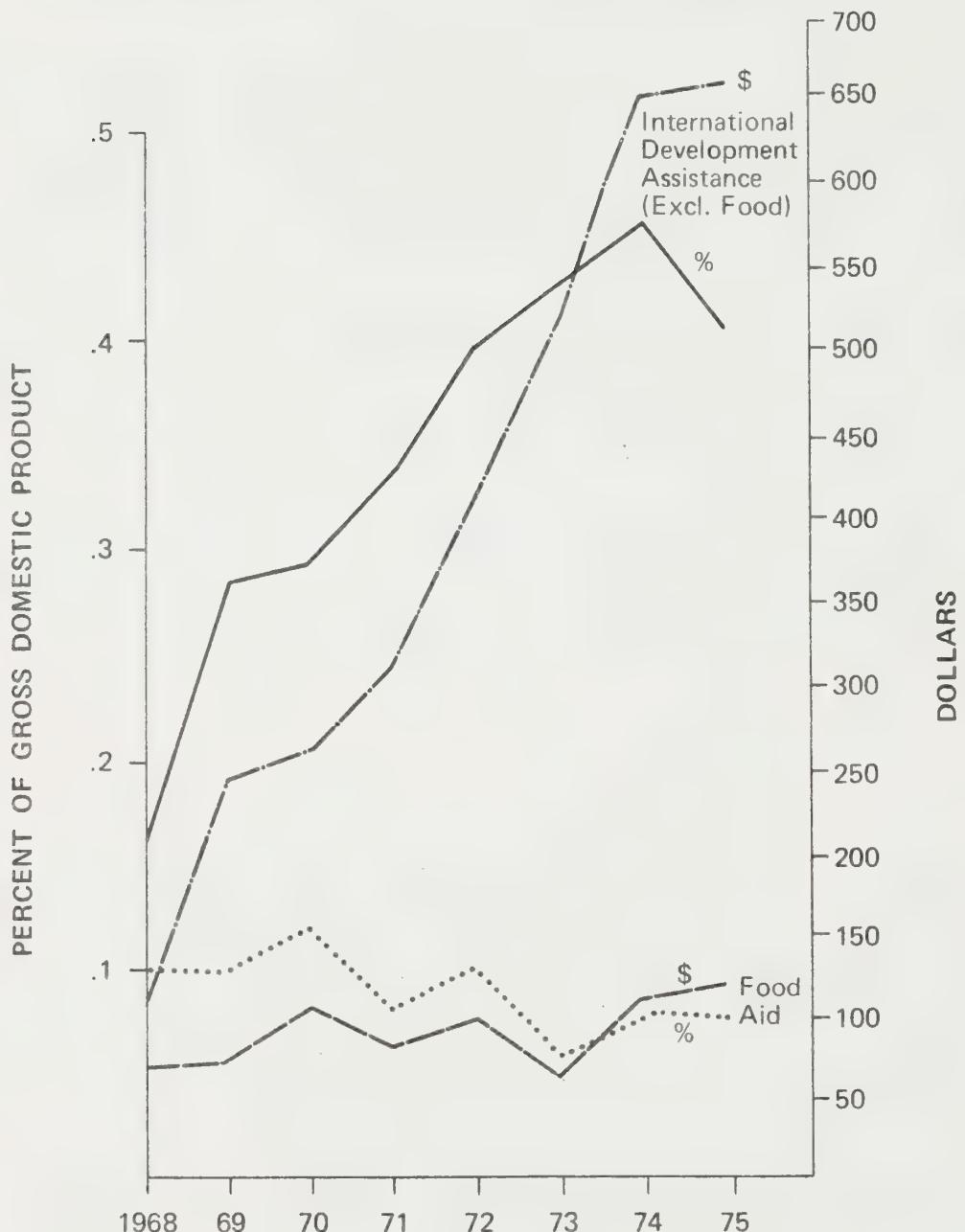
## 1.2 FOOD QUALITY AND SECURITY

### 1.2.1 Nutritious Food for all Canadians

The Government of Canada is committed to providing all Canadians with what is deemed to be an adequate level of nutrition. Once conclusion of the Nutrition Canada Survey carried out in 1972 was that Canadians who fall into the lowest income groups are those most likely to suffer from nutritional deficiencies such as low blood levels of Vitamin C and folic acid, high rates of anaemia and iron deficiency and low levels of thiamin. It therefore becomes possible to consider the relationship between the levels of food prices and of average incomes at the lower end of the scale as an indicator of progress in providing an adequate diet for the needy.

Figure 25 shows that the average income of the lowest 20th percentile (i.e. the top of the lowest fifth) of the Canadian population rose by 156 percent from 1961 to 1975 while over the same period the increase in the price of food consumed at home was held to 105 percent. At first glance, this suggests

FIGURE 24  
INTERNATIONAL DEVELOPMENT ASSISTANCE AND  
INTERNATIONAL FOOD AID, CANADA, 1968 to 1975



Sources: (1) Canadian International Development Agency, Annual Reviews.  
 (2) Statistics Canada, Cat. 11-003.

significant progress in the ability of the lowest income group to purchase an adequate diet, and some progress in the ability of the lowest income group to purchase an adequate diet, and some progress has certainly been made. However, Figure 25 also shows that the purchasing power of this group has increased even more rapidly when viewed in terms of their ability to obtain better clothing (index up only 61 percent), housing (index up 82 percent) or consumption goods in general (CPI up 85 percent).

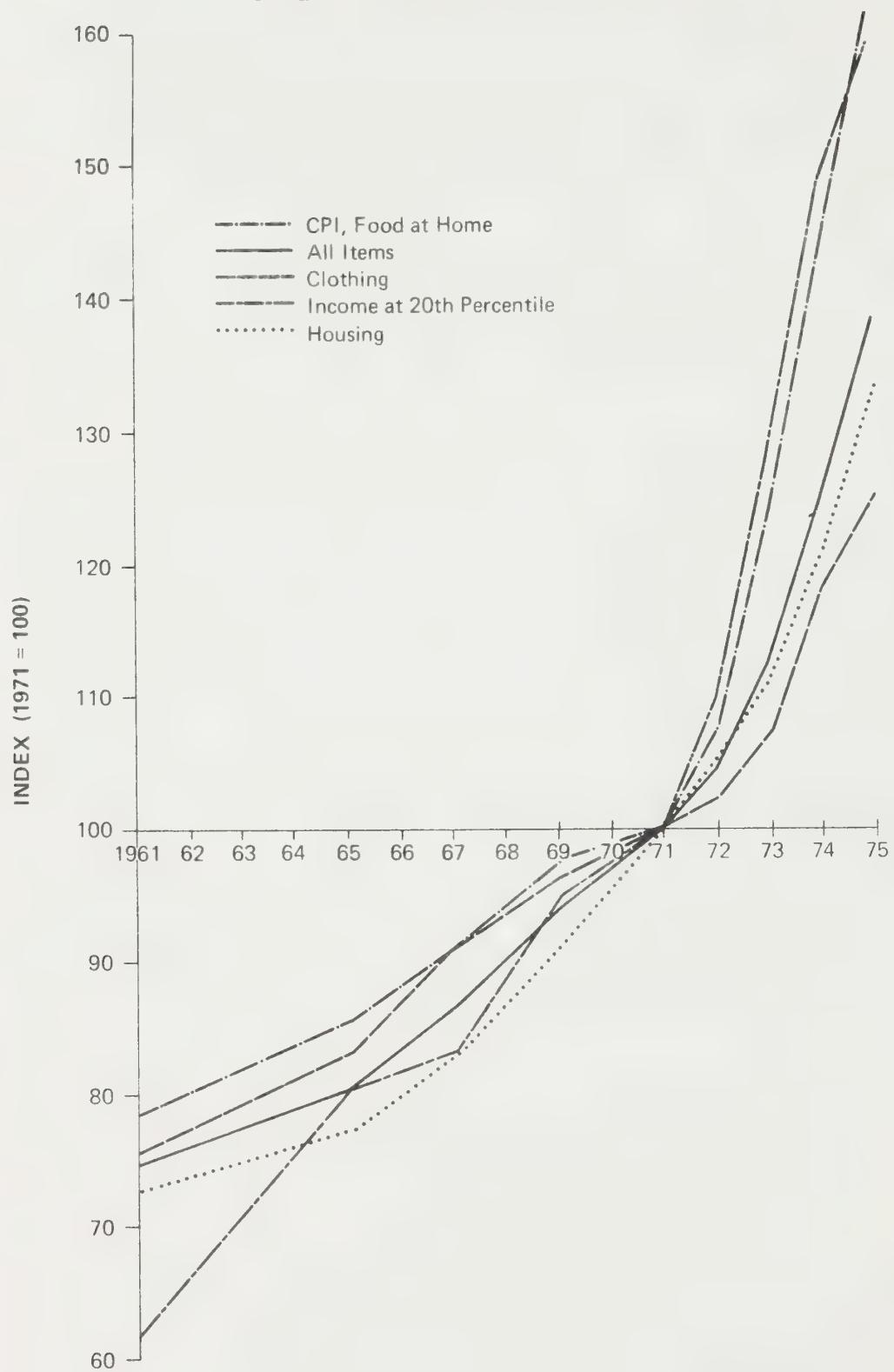
The sum up, there has been a marked increase in the availability of the basic necessities of food, clothing and shelter for low income Canadians during the past 15 years. However, Government programs to provide essential foodstuffs (e.g. bread, skim milk powder) at subsidized prices have clearly failed to prevent the relative gains in food purchasing power from falling short of those achieved for the other two basic necessities.

### 1.2.2 Informed Food Consumers

Agriculture Canada recognizes the important role played by its information bulletins and publications aimed at providing the public with general and specific knowledge on various aspects of food selection, purchase and use. Topics emphasized in this material include the preparation of nutritious low-cost foods, the prevention of food contamination and spoilage, and the growing and preserving of garden vegetables. The Information Division also sends a considerable amount of data directly to producers and fulfills the important role of providing editorial assistance in the publication of the Department's market information bulletins.

It is virtually impossible to measure the extent to which these activities have contributed to increasing the amount of food knowledge actually utilized by consumers, since patterns of consumption tend to change almost imperceptibly over time and are influenced by so many other factors. However, some indirect indicators i.e. actions can be traced by observing the trend in the flow of information made available to interested members of the public. Table 16 shows the numbers of a variety of specific levels of messages transmitted to the public through the facilities of the Information Division over the last eight years.

FIGURE 25  
INDEXES OF CONSUMER PRICE INDEX ITEMS VS AVERAGE INCOME  
OF 20TH PERCENTILE OF CANADIANS



Source: Statistics Canada, Cat. 13-206 and 62-001.

Table 16 ACTIVITY LEVELS, INFORMATION DIVISION, AGRICULTURE CANADA,  
1968/69 TO 1975/76

Fiscal Year	Mail Enquiries	Technical Letters Answered	Publications Distributed	Press Releases/ New Features	Division Expenditures
	000	Number	000	Number	\$000
1968-69	n.a.	1,479	n.a.	n.a.	1,034
1969-70	n.a.	1,516	n.a.	n.a.	1,054
1970-71	89	1,563	2,102	n.a.	1,472
1971-72	130	1,963	2,544	201	1,952
1972-73	119	1,491	2,944	199	2,299
1973-74	130	2,229	3,071	279	2,202
1974-75	109	1,920	3,013	229	2,679
1975-76	115	2,040	3,185	158	2,301

Sources: (1) Information Division, Agriculture Canada.  
 (2) Public Accounts of Canada, Vol. II.

The table reveals a gradual upward trend in most of the services provided. In particular, the numbers of general and technical mail enquiries demonstrate a continuing high level of public interest in questions related to food and agriculture.

Agriculture Canada's Food Advisory Service (FAS) employs about ten home economists to conduct experiments on food use and preparation and relays their findings to Canadian consumers through widely distributed brochures as well as radio bulletins and newspaper articles. These feature such topics as monthly money-saving dishes which take advantage of changes in the relative cost of recipe ingredients as well as describing new techniques of food preparation and preservation.

This food research group evaluates the taste and appearance of proposed new food products to be offered on the Canadian market. In a recent study, the eating quality of turkey broilers with less backfat was found to equal that of those with more backfat. This led to a reduction in the growing cycle for turkeys produced to the standards of the Canada Approved label. Other FAS research projects demonstrated that certain qualities of high temperature produced milk were less acceptable to consumers than those of fresh milk and that meat patties made from conventionally ground beef were more acceptable than those made from beef prepared by the flaking process.

### 1.2.3 High Commodity Standards

Agriculture Canada, operating under a number of enabling statutes, has assumed a general responsibility to ensure that a wide variety of processed foods are fit for human consumption. Beef, hogs, sheep and poultry must be slaughtered under the supervision of a federal inspector in order to obtain the Canada Approved label required for interprovincial or export shipment. Under similar conditions, over 100 fruit and vegetable products must meet certain Federal Government quality standards. Such inspections contribute to market development as well as to consumer safety by assuring foreign and domestic purchasers that minimum quality standards will be met or exceeded.

The extent to which this objective is being achieved can be partially assessed by examining the percentage of total slaughtering of animals which occurs in federal inspected establishments. Figure 26 shows that since 1962 this percentage has risen for hogs, has remained fairly constant for cattle and calves, but has declined for sheep. At first glance, these trends are not impressive, but it should be noted that this period was one in which the absolute volume of slaughtering rose by 58 percent for cattle and 8.5 percent for hogs, while it declined more than 43 percent for sheep and lambs. Federal inspection services were therefore being concentrated in the areas of increasing volume. This evidence of an absolute increase in inspection services is confirmed by the fact that federal expenditures on meat inspection rose from \$12.7 million in 1970/71 to \$24.8 million in 1975/76 (i.e. by 95 percent).

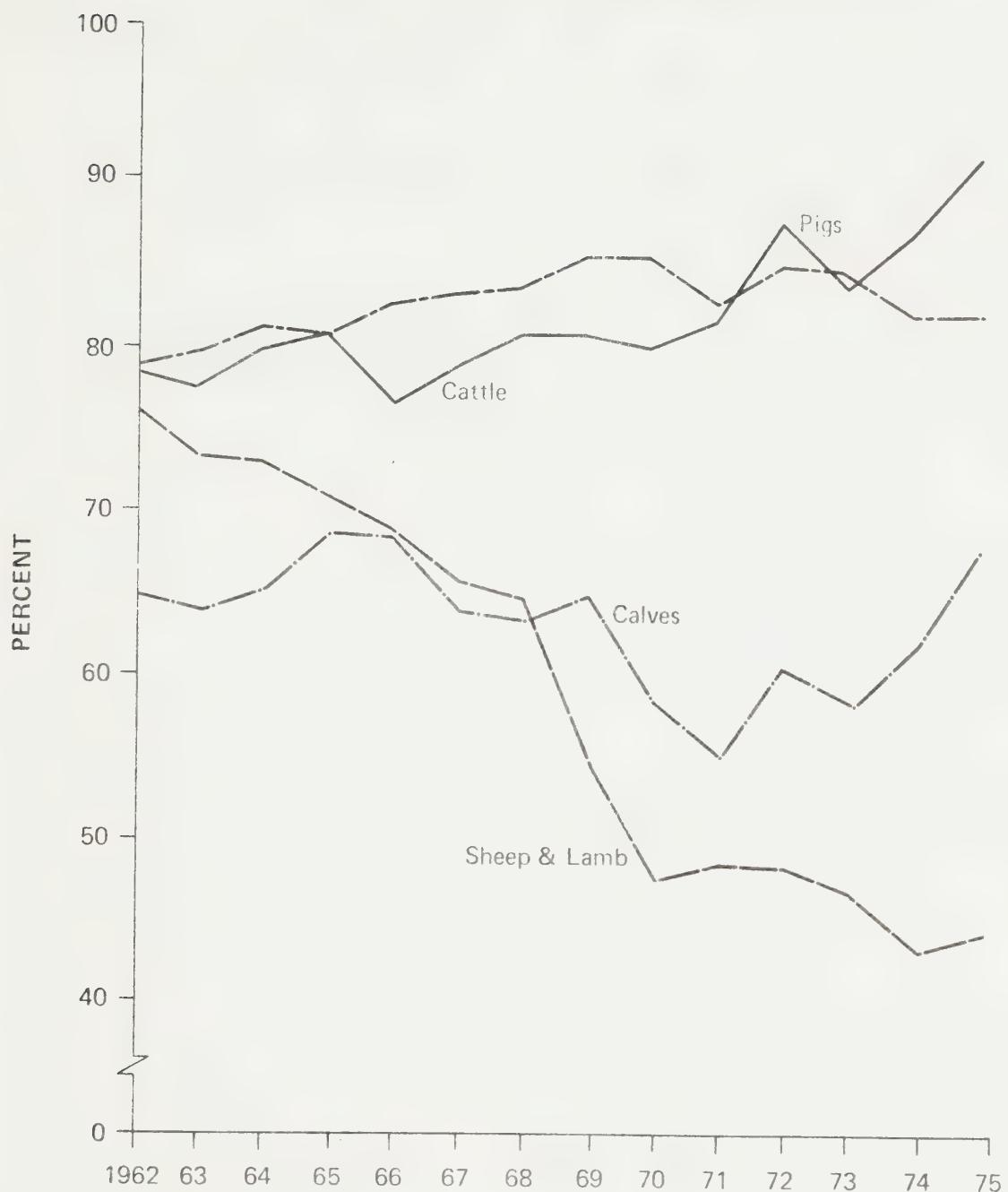
Another aspect of progress towards this instrumental goal is revealed by looking at activity levels in the area of fruit and vegetable inspection and grading. Table 17 shows that these services have been maintained at a consistent level over the last ten years. The relative constancy in the number of lots of fresh fruits and vegetables which have been detained suggests that a stable level has been reached beyond which it would not be economically feasible to adopt the stringent measures necessary to further reduce the portion of shipments deemed unacceptable (i.e. below the 3 percent indicated in the table).

### 1.2.4 Diversification of Production

It is an announced goal of agricultural policy to foster diversified productive capacity in order to increase Canada's capability to supply more of our domestic requirements and thereby lessen our dependence on imports.

Three performance indicators which help to indicate the extent of the progress towards this objective are: (1) trends in the proportion of farm cash receipts generated by each commodity, (2) trends in the proportion of commodity production within classes of commodity groups, and (3) movements in imports as a percentage of domestic disappearance. The proportion of farm

FIGURE 26  
SLAUGHTER IN INSPECTED ESTABLISHMENTS AS PERCENT OF  
TOTAL SLAUGHTER, CANADA, 1962 to 1975



Source: Health of Animals Branch, Agriculture Canada.

Table 17 SAMPLES GRADED, INSPECTIONS, AND LOTS DETAINED, FRUITS  
AND VEGETABLES, CANADA, 1966 TO 1976

Year	Inspections (Fresh Products)	Graded Samples (Processed Products)	Lots Detained <sup>a</sup> (Fresh Products)
- number -			
66/67	56,925	121,592	3,000
67/68	63,389	116,909	2,817
68/69	76,762	106,444	2,387
69/70	80,765	97,033	2,732
70/71	70,989	92,089	2,773
71/72	63,731	101,773	2,860
72/73	56,571	103,984	3,286
73/74	56,372	105,303	4,408
74/75	41,556	101,758	3,134
75/76	33,804	102,938	3,767

<sup>a</sup>Detained produce are either re-graded or (in some cases) destroyed.

Source: Agriculture Canada, Annual Reports.

cash receipts derived from each of the major animal products from 1966 to 1976 is shown in Table 18. The percentage of farm revenues derived from the sale of cattle and calves has remained almost constant over this decade, as has the revenue from hogs and poultry. However, there has been some shift into dairying at the expense of eggs. Perhaps more significant is that there has been a relative decline in revenues derived from 'other livestock products'. This is the category which would be most strongly affected by a move towards greater diversification; the evidence, though scanty, suggests that this miscellaneous category is recently losing the importance it had gained in the early seventies.

Table 19 itemizes the proportion of farm cash revenues produced by different categories of crops over the same 11-year period. The proportion of farm cash revenues from crop production represented by horticulture products (fruits and vegetables) has experienced a persistent decline from 9.8 percent of the total in 1966 to 7.7 percent in 1976. At the same time, the percentage from grains and oilseeds has risen by 2.1 percent. Again, if we focus on 'other crops,' the evidence suggests that this category is recently regaining the importance it had in the mid-sixties.

Changes in the proportions of the annual volume of grain production represented by the major crops over these eleven years are shown in Table 20. Over this period, barley production has risen from 18 percent to 25 percent of total volume while corn production has nearly doubled from 4 percent to almost 8 percent. These relative gains were made at the expense of oats and wheat production and therefore imply a movement in the direction of a more balanced output mix within the grains subsector.

Trends in imports as a percentage of domestic consumption were reviewed in Section 1.1.4 (Market Development). It was shown there that some progress has been made towards recapturing a portion of the domestic market for mutton, lamb and specialty cheeses. However, the data presented in that section also revealed an increasing dependence on beef and poultry imports in the seventies and showed that in recent years the only major agricultural commodities in which Canada has maintained a net export position have been the grains and oilseeds.

#### 1.2.5 Security of Imported Supplies

For a nation such as Canada, with almost all of its land mass lying north of the 45th parallel, complete self-sufficiency in all food products is a practical impossibility. Security of the nation's food supplies therefore depends, in large measure, on maintaining the flow of required imports. One aspect of this task lies outside the scope of agricultural policies and programs, namely, the maintenance of Canada's position as a financially responsible member of the international community, as a country whose credit is generally accepted and whose balance of payments is reasonably well managed. Beyond that, however,

Table 18 PERCENTAGE OF FARM CASH RECEIPTS FROM MAJOR ANIMAL PRODUCTS,  
CANADA, 1966 TO 1976

Year	Cattle and Calves	Hogs	Dairy Products	Poultry	Eggs	Other	Total
- percent -							
1966	38.5	17.4	24.5	9.8	7.3	2.5	100.0
1967	38.6	17.3	26.2	9.4	6.1	2.3	100.0
1968	39.0	16.5	26.2	9.4	6.6	2.3	100.0
1969	37.3	17.6	26.1	9.8	7.2	2.0	100.0
1970	37.2	18.4	25.9	10.0	6.6	1.9	100.0
1971	40.0	16.1	26.6	9.9	5.7	1.7	100.0
1972	39.1	18.6	25.3	9.6	5.3	2.1	100.0
1973	37.7	21.1	21.6	11.2	6.3	2.1	100.0
1974	38.4	18.0	24.8	10.7	6.1	2.0	100.0
1975	37.7	18.3	27.9	8.6	5.3	2.2	100.0
1976	39.3	16.8	26.6	9.6	5.8	1.9	100.0

Source: Statistics Canada, Cat. 21-001.

Table 19 PERCENTAGE OF FARM CASH RECEIPTS FROM MAJOR CROPS, CANADA,  
1966 TO 1976.

Year	Grains	Oilseeds	Fruits	Vegetables	Other	Total
- percent -						
1966	64.1	7.2	4.3	5.5	18.9	100.0
1967	64.8	5.9	4.5	6.1	18.7	100.0
1968	63.8	4.7	5.2	6.5	19.8	100.0
1969	54.1	8.4	5.8	7.8	23.9	100.0
1970	43.5	12.2	6.4	8.4	29.5	100.0
1971	50.3	12.5	5.2	7.3	24.7	100.0
1972	54.8	11.5	6.6	7.1	20.0	100.0
1973	59.1	15.6	5.1	6.1	14.1	100.0
1974	63.9	13.2	4.0	4.7	14.2	100.0
1975	69.3	8.2	2.7	4.0	15.8	100.0
1976	64.9	8.5	2.8	4.9	18.9	100.0

Source: Statistics Canada, Cat. 21-001.

it is desirable that Canada emphasize the development of food trade links with countries which have a record of friendly and stable relationships with this nation, and with whom there exists a well developed network of transportation and communication.

No other country meets these criteria better than the United States, and it is therefore not surprising to note (in Table 21) that the United States is by far the largest supplier of Canadian food imports, accounting for more than one-half of total imports from all sources. In addition, this proportion has been on a slowly increasing trend during recent years. It might be suggested that Canada is developing an undue reliance upon the United States for supplies of food. However, Table 20 also shows that the commodities for which this could present a potential problem are quite limited. United States supplies of meat could fairly easily be replaced from alternative sources or by expanding domestic production. Supplies of corn for feed could also be replaced from domestic sources, especially since Canadian corn production is now being extended into new areas. There remains the fresh fruits and vegetables, a substantial fraction of which could, if necessary, be replaced by off-season supplies of Canadian origin, albeit these would be chilled, frozen, or canned and would therefore lack some of the flavour of the fresh product which Canadians understandably prefer.

To the extent that a potential problem exists, then, it lies in the supplies of tropical fruits, cane sugar, tea, coffee and spices. Table 22 shows that Canada imports substantial quantities of these items, especially sugar and coffee. In this connection, two facts should be noted. First, for most of these commodities, Canada is not dependent on any one or two other countries for its supplies. Second, there is no particular nutritional value in either coffee or tea, while it is generally recognized that most Canadians consume more sugar in their diet than is compatible with optimal health.

A little more than 11 percent of our food imports come from Oceania. These consist mainly of mutton, lamb, beef and raw sugar. From the EEC, Canada receives about 7 percent of its food imports, largely in the form of wines and cheeses. Adjustments to unavoidable interruptions in the flow of these imports would be little more than an inconvenience to Canadian consumers.

It seems reasonable to conclude, therefore, that this instrumental goal is one which has been relatively easy for Canada to achieve, and that this nation can consider itself to be singularly blessed in terms of the extent to which it is able to provide its citizens with an assurance of adequate supplies of the foods required for a nutritious diet.

Table 20 PERCENTAGE PRODUCTION OF PRINCIPAL GRAINS, CANADA, 1966 TO 1976

Year	Wheat % of total	Oats % of total	Barley % of total	Rye % of total	Mixed Grain % of total	Com % of total
1966	49.9	22.3	17.9	1.0	4.9	4.0
1967	45.3	23.0	19.3	.9	5.9	5.7
1968	42.9	23.6	21.5	.9	5.7	5.4
1969	42.6	22.5	23.6	1.0	5.6	4.7
1970	25.2	26.9	31.1	1.4	7.6	7.9
1971	30.4	20.9	34.6	1.3	6.2	6.7
1972	34.0	19.1	33.0	0.9	6.7	6.3
1973	36.8	20.3	29.1	0.9	6.0	6.9
1974	36.2	18.9	30.0	1.4	6.0	7.5
1975	39.0	18.0	27.2	1.3	5.6	8.9
1976	45.2	16.8	24.8	1.2	4.4	7.6

Source: Agriculture Canada, Selected Agricultural Statistics for Canada,  
Pub. 76/10.

Table 21 TOTAL IMPORTS BY CANADA OF MAJOR AGRICULTURAL PRODUCTS FROM UNITED STATES AND OTHER COUNTRIES, AVERAGES FOR 1968-70 TO 1973-75

	1968-70 (thousands)		1973-75 (thousands)	
<u>All Agricultural Products</u>	\$1,208,120		\$2,627,496	
United States	\$ 629,456	(52.1%)	\$1,464,034	(55.7%)
Other Countries	\$ 578,664	(47.9%)	\$1,163,462	(44.3%)
<u>Corn</u>	kg. 636,854	\$135,377	kg. 976,237	\$106,562
United States	636,829	(100%)	952,055	(97.5%)
Other	25	(0%)	24,182	(2.5%)
<u>Mutton and Lamb</u>	32,816	\$ 19,692	17,832	\$ 22,305
United States	167	(0.5%)	386	(2.2%)
Other	32,649	(99.5%)	17,446	(97.8%)
<u>Pork</u>	15,591	\$ 14,691	27,586	\$ 46,846
United States	14,739	(94.5%)	27,425	(99.4%)
Other	853	(5.5%)	161	(0.6%)
<u>Beef</u>	39,999	\$ 42,388	60,036	\$101,121
United States	2,091	(5.2%)	9,605	(16%)
Other	37,909	(94.8%)	50,431	(84%)
<u>Fruits &amp; Vegetables<sup>a</sup></u>	1,046,673	\$190,706	1,400,806	\$359,854
United States	744,443	(71.1%)	1,067,693	(76.2%)
Other	302,231	(28.9%)	333,114	(23.8%)
<u>Cheese</u>	13,466	\$ 16,832	21,309	\$ 39,742
United States	1,511	(11.2%)	1,947	(9.1%)
Other	11,955	(88.8%)	19,361	(90.9%)

<sup>a</sup> Fresh only, potatoes not included.

Source: Agriculture Canada, Canada's Trade in Agricultural Products,  
Publ. 76/8.

Table 22 IMPORTS BY CANADA OF SELECTED TROPICAL AND CITRUS FRUITS,  
SUGAR, TEA & COFFEE, AVERAGES FOR 1968/70 TO 1973/75

	1968-1970		1973-1975	
	\$000	tonnes	\$000	tonnes
Bananas	35,548	195,937	44,526	216,426
Grapefruit	11,204	84,928	41,983	88,369
Lemons	4,203	16,194	6,083	17,758
Oranges, Mandarines, Tangerines	33,281	192,473	49,935	219,669
Raw Sugar	67,324	920,310	341,666	923,356
Coffee	87,788	85,789	107,823	79,818
Tea	22,364	22,164	28,543	23,638

Source: Agriculture Canada, Canada's Trade in Agricultural Products,  
Pub. 76/8.

## 1.3 RURAL DEVELOPMENT AND INCOME SECURITY

### 1.3.1 Increased Producer Bargaining Power

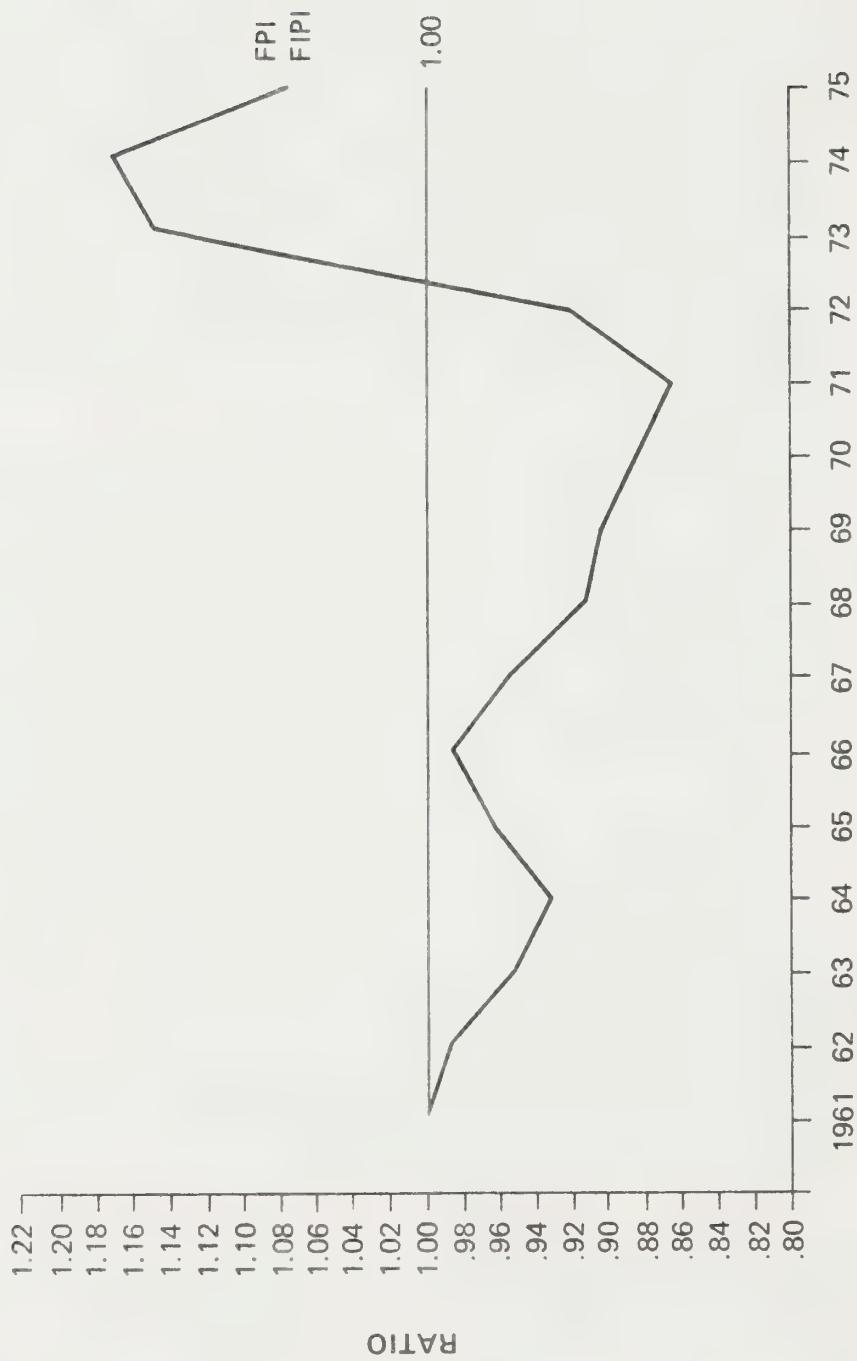
It is generally agreed that agricultural producers should possess bargaining power comparable to that of their principal suppliers and major customers. Some light can be shed on the ability to maintain an appropriate level of producer bargaining power by examining trends in the ratio of the farm price index to the farm input price index in recent years. Figure 27 shows that from 1961 to about mid-1972 increases in input prices exceeded those in farm gate prices. Although other factors were also involved, this record is consistent with the hypothesis that suppliers to the farm sector held a stronger position in price-setting of their products sold to farmers than did the latter for their products sold to wholesalers and distributors. The reversal of this trend after mid-1972 was largely due to sharp increases in the demand for agricultural products and does not seem to be associated with any structural shifts which would alter the balance of market power.

In a broad sense, the bargaining power of particular functional groups in a democratic society rests on such foundations as their strength in numbers, their relative income position, and the perceived importance of their economic role relative to that of other occupational groups. Assessed in these terms, farmers have clearly suffered an erosion of their power base in terms of their declining proportion of the labour force, but this may well have been offset by recent gains in their income position and by a growing realization of the essentiality of their role in the nation's future growth and development. The extent of the improvement in net farm income since 1971 is illustrated in Table 23, which also reveals the extent to which the benefits were concentrated in the grains and field crops subsectors as contrasted with much slower income growth in poultry and horticulture.

The extent to which government has intervened in the market place to enhance the bargaining position of agricultural producers can be partially evaluated by tracking changes in the percentage of farm cash receipts for major agricultural commodities accounted for by sales through producer marketing boards. Table 24 sets out the changes in these proportions since 1970. For some commodities such as grains, dairy products, poultry and eggs, 75 percent or more of the sales are now made through marketing boards operating under various mechanisms of government sponsorship and/or supervision. On the other hand, three-quarters of the vegetables, 90 percent of the oilseeds and almost all cattle are marketed entirely through private channels.

For dairy, poultry and eggs, the figures in Table 24 indicate that an increasing proportion of total sales has been handled by marketing boards in recent years. While no consistent trend is apparent for other commodities, it is clear that marketing boards have become well established in certain

FIGURE 27  
RATIO OF FARM PRICE INDEX TO FARM INPUT PRICE INDEX,  
CANADA, 1961 to 1975



Source: Statistics Canada, Cat. 62-003 and 62-004.

Table 23 AGGREGATE NET FARM INCOME BY TYPE<sup>a</sup> OF FARM, CANADA, 1971 TO 1975

Year	Dairy	Cattle	Hogs	Poultry	Livestock Combination	Grain	Crop Combination	Fruits and Vegetables	Total
- 000,000 -									
1971	244	126	28	160	53	215	39	70	932
1972	309	221	105	191	101	357	77	94	1,563
1973	272	267	175	300	160	399	123	127	2,059
1974	406	317	92	316	158	1,039	237	131	3,037
1975	645	293	127	223	143	1,305	211	134	3,254
Percent Increase '71 to '75	264	232	450	140	371	606	546	190	250

<sup>a</sup>Based on sales of major (51 percent) commodity.

Source: Statistics Canada, Cat. 21-202.

Table 24 PRODUCERS' RECEIPTS FROM MARKETING BOARDS AS A PERCENTAGE OF FARM CASH RECEIPTS BY COMMODITY, CANADA, 1970, 1972, 1974

Commodity	1970			1972			1974		
	Farm Cash Receipts	Receipts Through Marketing Boards	Farm Cash Receipts	Receipts Through Marketing Boards	Farm Cash Receipts	Receipts Through Marketing Boards	Farm Cash Receipts	Receipts Through Marketing Boards	%
-\$000,000-									
Grains	874	774	89	1,244	1,170	94	2,569	2,253	88
Oilseeds	-	-	-	241	50	21	552	58	10
Cattle & Calves	969	-	-	1,205	n.a.	n.a.	1,681	n.a.	n.a.
Hogs	500	255	51	590	362	61	788	525	67
Dairy Products	754	511	69	880	774	88	1,308	1,104	84
Poultry	263	135	51	296	241	82	472	384	81
Eggs	170	36	21	164	73	45	269	198	74
Fruits	83	45	54	99	51	51	165	73	44
Vegetables	187	52	28	221	56	25	406	97	24
Others	248	34	18	524	200	38	657	328	50
Total	4,048	1,842	46	5,463	2,976	54	8,867	5,020	57

Source: Agriculture Canada, Marketing Board Statistics, Pub. 76/7.

commodity markets and have managed to maintain a lesser degree of participation in others. While the bargaining power of some types of marketing boards (e.g. in hogs) is negligible, there is little doubt that the existence of such producer organizations tends to temper possible abuses of market power by other participants in the system, who recognize that predatory behavior on their part could rapidly lead to producer demands for retaliatory powers.

### 1.3.2 Stability of Producer Returns

The Federal Government has made a commitment, through its program of price support to selected agricultural commodities under the Agricultural Stabilization Act (ASA), to cushion the impact of temporary but severe declines in the market prices of these products. In general, ASA deficiency payments are intended to bridge the gap between market receipts and the production costs of an efficient producer. They are therefore set at levels which will not create an incentive to expand production when market prices are low. This assistance is provided to assure efficient producers that they will not be bankrupted by unexpected market fluctuations which are beyond their control. The absolute amounts of stabilization payments provided to different commodities indicate the extent of government agricultural price stabilization assistance and reveal that certain commodities receive proportionally greater assistance than do others. Table 25 shows that the ASA assistance to dairy producers amounted to \$18,809 million over the eighteen-year period ending March 31, 1976. The corresponding cost of ASA assistance to producers of beef, hogs/pork, sugar beet, and eggs was \$58.1 million, \$92.7 million, \$38.8 million and \$14.1 million over the same period.

At the retail level, it is possible to compare Canada's record of price stability against that of its major trading partners. An examination of the relative consumer food price index movements shown in Figure 28 reveals that recent price movements in Canada have closely matched those in the United States, but with somewhat greater fluctuation on the upside. Food price changes in North America have been more moderate than in the United Kingdom and Japan but have exceeded the corresponding movements in France and Germany.

Figure 29 compares producer returns in Canada with those in the United States for four important livestock products over the period since 1972. Examination of those charts shows that the fluctuations in farm-gate prices have been much less extreme in Canada. This is especially true of chickens and eggs, less so with respect to cattle and hogs. The greater relative stability of chicken and egg prices is partly attributable to the role played by federal and provincial marketing boards in the production and sale of these commodities.

Another way in which the government assists in achieving greater stability of agricultural incomes is to help cushion the adverse impact of natural hazards. The extent to which the government is meeting its commitment to this goal can be gauged by examining trends in claims paid under the crop insurance programs,

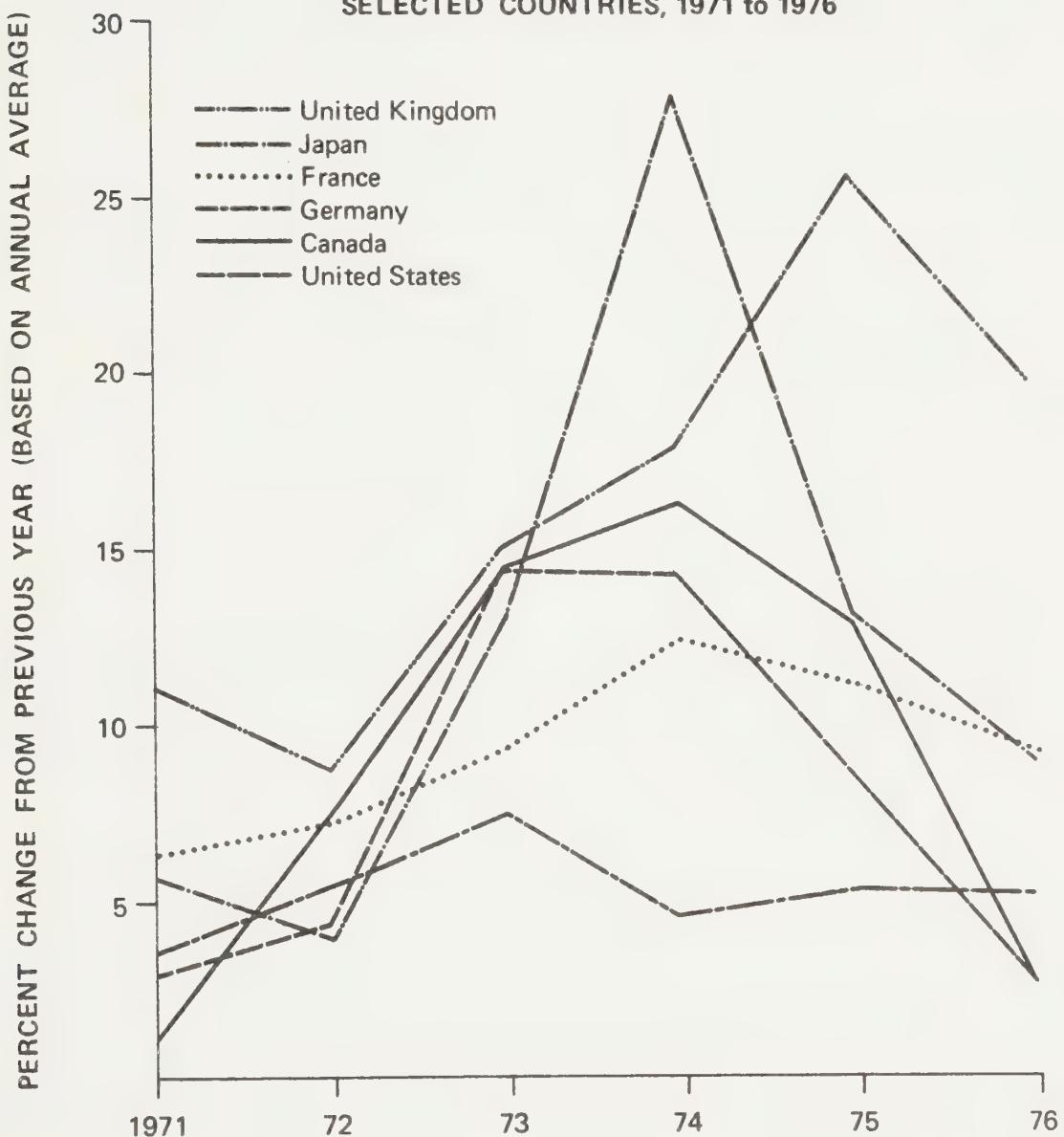
Table 25 AGRICULTURAL STABILIZATION BOARD (ASB) PAYMENTS BY COMMODITY, CANADA, (18 YEARS ENDING MARCH 31, 1976)

	ASB Payments \$000	% of Total ASB Payments	ASB Payments as % of Total Receipts from Commodity - percent -	Receipts from Commodity as % of all Farm Receipts
Fruit	2,685	0.13	0.18	1.73
Vegetables	530	0.03	0.03	2.23
Total Horticulture	3,215	0.16	0.09	3.96
Field Crops <sup>a</sup>	63,628	3.09	0.22	32.69
<u>Total Crops</u>	<u>66,843</u>	<u>3.25</u>	<u>0.21</u>	<u>36.65</u>
Beef	58,077	2.82	0.32	20.79
Hogs	92,679	4.50	1.05	9.97
Poultry and Eggs	17,097	0.83	0.22	8.88
Dairy	1,808,900	87.90	12.31	16.57
Other Animal	13,718	0.67	1.21	1.28
<u>Total Animal Products</u>	<u>1,990,471</u>	<u>96.72</u>	<u>3.91</u>	<u>57.49</u>
Other	538	0.03	0.01	5.86
<u>Total</u>	<u>2,057,852</u>	<u>100</u>		<u>100</u>

<sup>a</sup> Includes grains, oilseeds, potatoes, sugar beet, flowers, seeds.

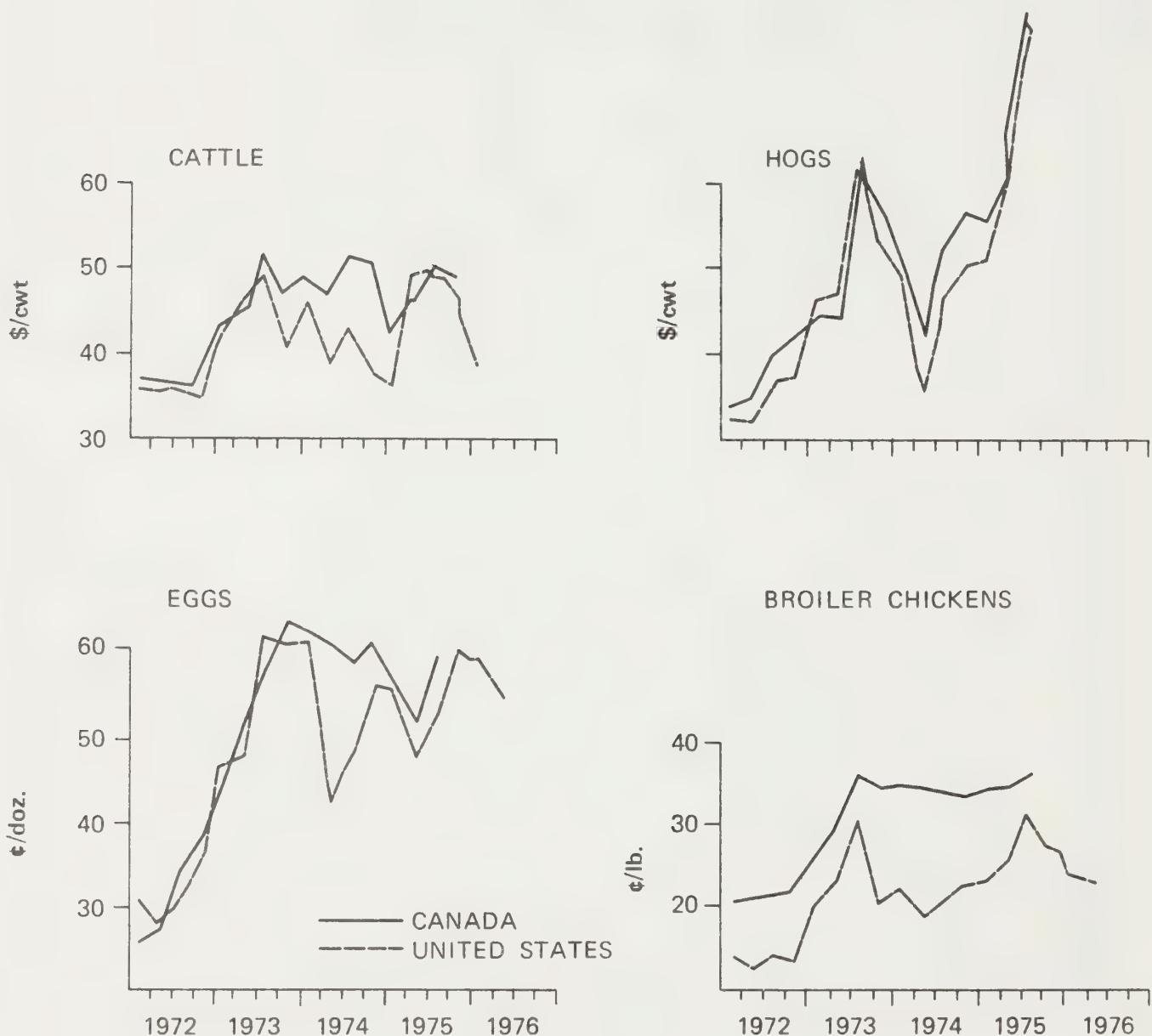
Sources: (1) Agricultural Stabilization Board, Annual Reports.  
 (2) Statistics Canada, Cat. 21-001.

FIGURE 28  
FOOD PRICE INDEX MOVEMENTS IN  
SELECTED COUNTRIES, 1971 to 1976



Source: Statistics Canada, unpublished data on Consumer Prices & Price Indexes.

FIGURE 29  
RETURNS TO THE PRODUCER FOR SELECTED FARM PRODUCTS,  
CANADA AND THE UNITED STATES, 1972 to 1976



\* The Canadian Egg Marketing Agency commenced operations in June, 1973.

Sources: (1) Agriculture Canada, Report of the Canadian Agricultural Outlook Conference, 1975 and 1976;  
(2) United States Department of Agriculture, Economic Research Service, Poultry and Egg Situation, various issues.

premiums paid for insurance and the extent of participation in crop insurance schemes. The overall size of the federal effort is revealed in Table 26 which shows the cumulative premiums charged, estimated indemnities, and the farmer's share of premiums for crop insurance programs from the inception of federal cost-shared programs in 1961 up to March 31, 1975. The cumulative loss ratio of 98 percent indicates that claim payments have almost equalled the total collected as premiums. Insured farmers, as a group, have therefore collected about \$1.60 in loss compensation for each dollar of premium contribution.

Table 26 CUMULATIVE PREMIUM COLLECTIONS AND INDEMNITY PAYMENTS  
UNDER CROP INSURANCE PROGRAMS TO MARCH 31, 1976, CANADA

<u>Farmers' Share of Premiums</u>	<u>Total Premium Charged</u>	<u>Total Estimated Indemnities</u>	<u>Loss Ratio</u>
\$000	\$000	\$000	\$000
148,487 (56%)	265,000	232,666	88

Source: Agriculture Canada, Crop Insurance Annual Report.

Figures 30 and 31 show the increasing extent of insurance coverage during the fiscal years from 1961 to 1976. Over this period, the number of participating farmers increased over thirty-fold while the value of coverage rose even more rapidly as the average amount of coverage per farmer nearly quadrupled to reach over \$10,000 in 1975/76.

### 1.3.3 Viable Farm Units

A longstanding objective of agricultural policy is to promote the viability of the family farm to the extent permitted by advances in technology, changing relative factor prices, and the domestic competitive climate. The aim is to upgrade the managerial and technological efficiency of these units which tend to be at the smaller end of the size spectrum. This is partially accomplished through capital assistance for the consolidation of farms into larger and more viable operating units and for the acquisition of needed capital plant equipment. In a complementary fashion, submarginal operators are assisted in disposing of their farms and obtaining non-farm employment.

FIGURE 30  
 TOTAL CROP INSURANCE COVERAGE & NUMBER OF  
 FARMERS INSURED, CANADA, 1961/62 to 1974/75

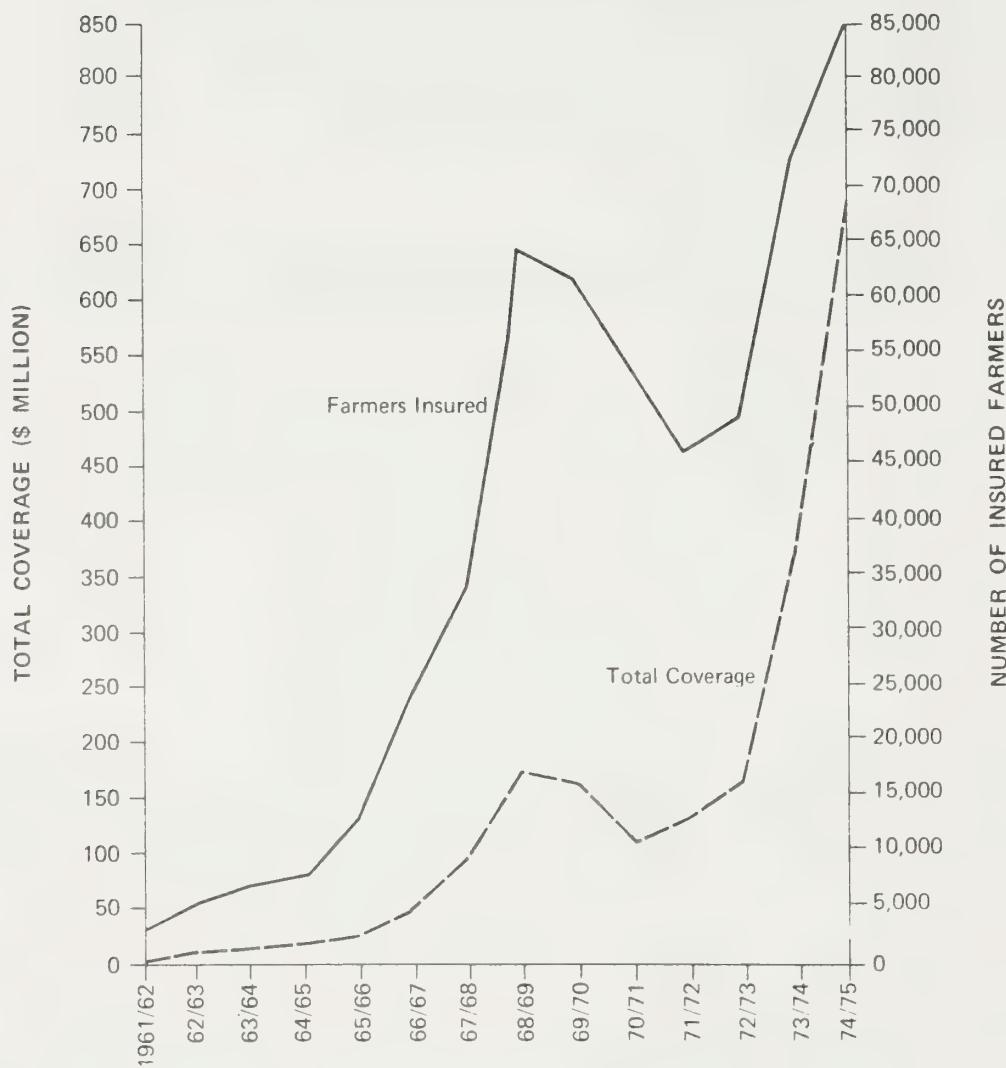
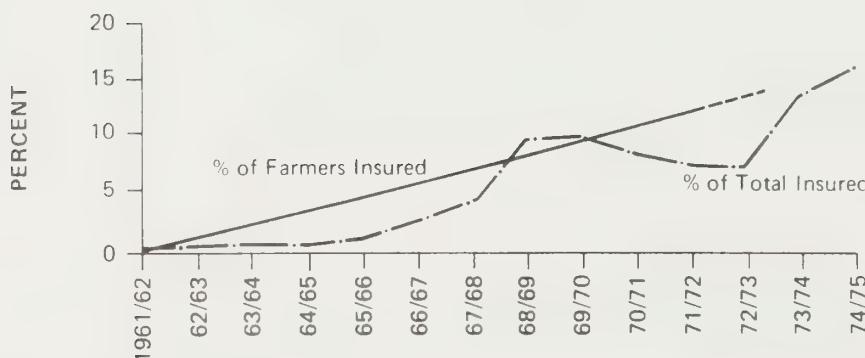


FIGURE 31



Source: Agriculture Canada, Crop Insurance Annual Reports.

Table 27 SOURCES OF TOTAL NET INCOME OF AVERAGE FARM TAXPAYERS CANADA AND REGIONS, 1974

	Net Farm Income	Wages & Salaries			Off-Farm Self-Employ			Rental & Invest.			Family Allowance			Other Sources		Total Off-Farm	Total Net Income
		\$	%	\$	\$	%	\$	\$	%	\$	\$	%	\$	%	\$	%	
- percent -																	
Maritimes	1,826	26	3,142	45	8	10	4	7							5,205	74	7,032
Québec	2,419	34	2,739	38	7	12	4	5							4,782	66	7,201
Ontario	2,910	29	4,225	43	7	14	2	5							7,014	71	9,923
Prairies	6,017	57	2,584	24	4	10	2	3							4,619	43	10,636
British Columbia	1,286	12	6,151	55	10	16	2	5							9,883	88	11,169
Canada	4,452	44	3,241	32	7	11	2	4							5,565	56	10,018

Source: Agriculture Canada, Income and Financial Data of Farm Taxpayers, 1974, Pub. 77/9.

An indicator which sheds some light on the economic health of the family farm is the distribution of total income for the average farm taxfiler among the various sources of farm and off-farm income. This distribution differs greatly between regions as is shown in Table 27. However, the table also shows that off-farm incomes exceeded income from farming operations in 1974 in all regions except the prairies. In Québec and Ontario, off-farm sources contributed 66 and 71 percent, respectively, of total net income.

Table 28 FARM AND OFF-FARM INCOMES OF AVERAGE FARM OPERATOR TAXFILERS, CANADA, 1971 AND 1974

Years	Average Net Income of Farm Taxfilers	Farm Income		Non-Farm Income	
		\$	%	\$	%
1971	4,384	1,237	28	3,147	72
1974	10,018	4,452	45	5,565 <sup>a</sup>	55
1971/74	129	260		77	

<sup>a</sup>Including family allowance payments of \$227.

Source: Agriculture Canada, Income and Financial Data of Farm Taxfilers 1974, Pub. 77/9.

An interesting recent development has been a dramatic increase in the absolute amount, as well as the relative share, of that portion of farm taxfilers income which is derived from farm operations. Table 28 shows that farm income rose 260 percent between 1971 and 1974, while off-farm income rose only 77 percent over the corresponding period. As a result, farm income as a percentage of the total income of farm operators rose from 28 percent to 45 percent. Figure 32 shows that these developments were also reflected in the relative income position of farm families as compared to non-farm families.

FIGURE 32  
AVERAGE FARM AND NON-FARM FAMILY INCOMES:  
A COMPARISON, CANADA, 1961 to 1974



Source: Wirick R.G., A Preliminary Paper on Some Food Policy Aspects of Farm Income, Food Prices Review Board, Reference Paper No. 9.

Another useful comparison is that of income source by type of farming enterprise. Table 29 breaks down aggregate incomes by source and type of farm for 1973 and shows that the dairy, hog, poultry and horticulture subsectors provided operators with net income from farming activities which exceeded their non-farm receipts. On the other hand, net non-farm incomes were especially important to producers of cattle and grain and for crops other than fruits and vegetables. Table 29 also estimates the average income of operators earning more than \$2,500 per annum in the various types of farming enterprises. Average incomes of operators of poultry and of fruit and vegetable farms exceeded those in other types of agricultural enterprise.

Movements in the components of total net farm income for the period 1951-75 are illustrated in Table 30. Total operating expenses rose from 45 percent of total cash receipts in 1951 to 60 percent of this amount in 1976. Total net farm incomes as a percentage of total cash receipts declined from 71 percent in 1951 to 32 percent in 1961 and then recovered somewhat to reach 41 percent in 1976. The family farm is clearly being faced with higher cash outlays for necessary inputs and is still heavily dependent on off-farm activities for much of its cash receipts.

The amount of federal assistance, financial and technical, provided to foster the welfare of the small family farm has already been discussed under an earlier subsection dealing with the goal of Effective Resource Management.

#### 1.3.4 Rural Community Development

An important objective of the federal government as a whole is that of fostering the economic viability of rural communities and promoting their development. Because their welfare is closely tied to the prosperity of the local agricultural sector, this aim also becomes one of the instrumental goals of agricultural policy.

Recent changes in the national population distribution between urban and rural, and between farm and non-farm components of the rural population, are shown in Figure 33. There has been a marked levelling-off in the rate of urbanization of the population and in the accompanying decline in the rural population. While urban dwellers increased from 56 percent of the population in 1951 to 75 percent in 1971, the bulk of this increase took place prior to 1966. The change from 1966 to 1971 has slowed to less than 3 percent. The rural fraction of the population therefore seems to be stabilizing. The two lower curves in Figure 33 show that the rural non-farm fraction has ceased to decline, but that the proportion of people actually living on farms is still falling slowly.

Changes in the economic structure of rural communities can be measured by comparing the numbers employed in various industrial and commercial categories. For 1961 and 1971, this data is set out in Table 31. The table shows that the most important employers of labour continue to be the sectors of primary agriculture, manufacturing, and trade.

Table 29 INCOME SOURCES BY TYPE OF FARM, CANADA, 1973

Income Source	Dairy	Cattle	Hogs	Poultry	Livestock Comb.	Grain	Other Crops	Fruit & Veg.
- \$ millions -								
Wages and Salaries	43	275	47	24	84	257	107	48
Non-farm self-employment	8	59	7	4	18	34	23	7
Investment and rental	19	58	6	3	17	76	25	9
Other income	20	50	9	4	16	64	20	7
Total net non-farm income	91	444	70	35	134	432	175	71
Net farm income (1)	272	267	175	300	160	399	115	127
Total net income (3)	363	711	244	335	294	830	290	198
<hr/>								
Number of operators <sup>a</sup> (2) '000	55.3		89.6	5.6	--	69.8	--	7.8
Average farm income (1) $\div$ (2) \$	4,918		4,933	53,571	--	5,716	--	16,282
Average net income (3) $\div$ (2) \$	6,564		10,658	59,821	--	11,891	--	25,385

<sup>a</sup>Number of Canadian farms with sales of \$2,500 were classified by production type.

Source: Statistics Canada, Cat. 21-202 and 21-511.

Table 30 COMPONENTS OF NET FARM INCOME, CANADA, SELECTED YEARS, 1951 TO 1976

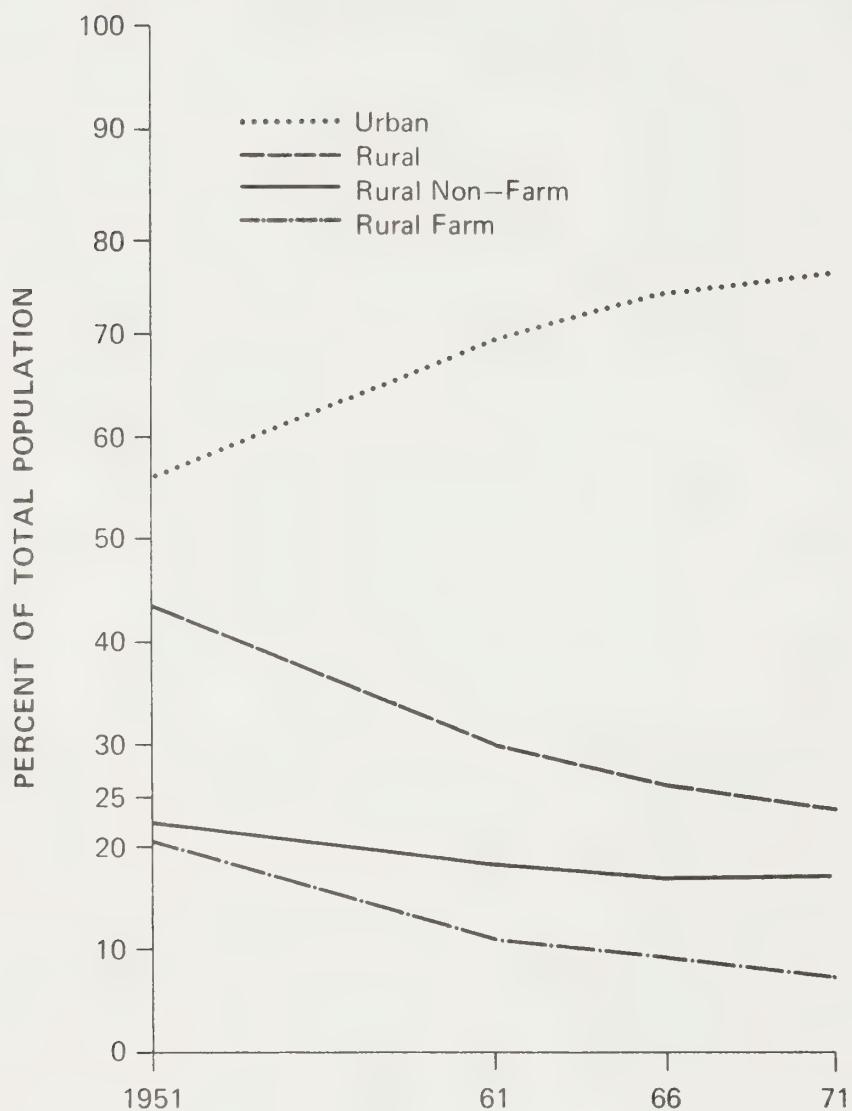
Source: Statistics Canada, Cat. 21-202.

Table 31 RURAL LABOUR FORCE BY INDUSTRY OF EMPLOYMENT, CANADA, 1961 AND 1971

	Agriculture		Manufacturing		Construction		Transportation		Trade		Total	
	000	%	000	%	000	%	000	%	000	%	000	%
<b>RURAL COMMUNITIES:</b>												
1961	563.7	33	203.4	14	103.2	6	130.3	8	188.6	11	1,680.7	100
1971	422.0	22	293.8	16	122.6	7	116.1	6	223.5	11	1,598.1	100
1971/61 Change	-25%		-44%		19%		-11%		19%		-5%	

Source: Statistics Canada, Cat. 71-001.

FIGURE 33  
PERCENTAGE MOVEMENTS IN URBAN AND  
RURAL POPULATION, CANADA, 1951 to 1971



Source: Adapted from Table 4.26 of Volume I.A in Orientation of Canadian Agriculture.

## C.2 INTERNAL FACTORS

The development of Canadian agriculture has been greatly influenced by factors operating on the domestic scene. For convenience, these non-policy influences are discussed under three headings: factors that affect (1) food production, (2) the demand for food, and (3) the marketing of food.

### 2.1 CHANGES IN PRODUCTION

Changes in the technical relationships between outputs and inputs and changes in input combinations have played a key role in determining the mix and location of Canadian agricultural output. While these factors have been influenced to some extent by government policy, much of their evolution has been a technological process, possessing its own momentum.

Canadian agricultural output has increased by 2.04 percent per year from 1961 to 1974. This rate of increase fluctuated widely from year to year as variations in cereal output on the prairies caused large annual changes in total Canadian output. During this same fourteen-year period, the index of production inputs increased at a relatively constant rate of 1.17 percent per year although specific components of the input index changed at considerably different rates. The labour component decreased by 2.75 percent per year, real estate increased by 1.68 percent and capital (all other inputs) increased by 3.39 percent. These data series<sup>6</sup> show that there has been substantial substitution of capital for labour in the agricultural sector, that the use of inputs in general has increased despite the reduced usage of labour, that most of the increase in output can be explained by increased use of inputs rather than by increased productivity of those inputs and, finally, that overall productivity in agriculture has increased at a rate of less than one percent per year.

As a result of these changes there has been an increase in the average capital value per farm from \$27,389 in 1961 to \$135,411 in 1975. This means that anyone entering farming requires substantially greater investment and that the benefits of reducing risk and uncertainty in agriculture are even greater now than in 1961. The rather low rate of productivity increase is difficult to explain because the rapid rate of capital growth should have led to the introduction of the most recent technology. Perhaps these technological advances have simply enabled the nation to greatly increase<sup>7</sup> its output of food without facing higher real unit costs or it may be that management of the additional resources has not been as efficient as might have been anticipated.

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<sup>6</sup>Source: Shute, D.M. National and Regional Productivity of Canadian Agriculture, 1961 to 1974, Canadian Farm Economics, December 1975.

<sup>7</sup>The index of real domestic agricultural product has risen by more than 25 percent since 1961.

## 2.2 CHANGES IN THE DEMAND FOR FOOD

An important element affecting the demand for food in Canada has been the increasing value of leisure time and the concomitant willingness of Canadians to pay for services provided as part of their food purchases. This is illustrated by the growing share of the family budget which is spent on food prepared outside the home and on frozen or pre-cooked foods. These trends have reduced the share of the consumer food dollar received by farmers to about forty percent.

The pattern of Canadian food consumption has also been altered through the resource of consumption of food items to changes in income, since the last 25 years have been a period of rising levels of real income. The commodity groups for which consumption responds very positively to income change are frozen foods, veal, lamb, high-quality beef, and prepared foods while cheese, salad dressing, corn oil and fluid milk show above average response. For certain food groups, consumption actually responds negatively to income growth; these are cereal products, margarine, lard and sugar. Thus, an important explanation of changes in food consumption patterns over time and of the differential growth of sectors in agriculture is this varying response of consumption to income changes.

## 2.3 CHANGES IN FOOD MARKETING

Developments in the marketing of food in Canada are described in Volume I of the Task Force Report. The wide variety of institutions providing marketing services makes it difficult to identify trends of universal importance. For certain commodities, marketing boards have been a vehicle whereby farmers have gained greater influence over the marketing of their product while, for other commodities, contracting and vertical integration has given large food companies greater influence over the production of food. At the retail level, chain stores have accounted for an increasing proportion of food sales and have integrated backward into providing wholesale services as well as some processing.

The market power of large food firms has increased to a degree which raises serious questions concerning the maintenance of competitive efficiency in the marketing sector. Despite the establishment of national marketing agencies for a few commodities, this growth of chain store influence has adversely affected the balance of bargaining power between the producers and the purchasers of farm products.

<sup>8</sup>Source: Hassan, Z.A. and S.R. Johnson, Consumer Demand for Major Foods in Canada, Agriculture Canada, Pub. 76/2.

### C.3 INTERNATIONAL FACTORS

#### 3.1 WORLD DEMAND AND SUPPLY OF FOOD

In the postwar period, the long-term average increase in world food production has slightly exceeded the growth of population. This general increase in per-capita food availability is very significant although it hides many problems at a disaggregated level: in certain countries, food production has not kept pace with population growth, widespread hunger still exists, and short-term production shortfalls have frequently occurred.

The recent world food 'crisis' of 1972-74 was characterized by cereal stocks falling drastically and prices of cereal rising substantially. These events served to focus attention on prospective food problems at the United Nations World Food Conference in November of 1974. The United Nations assessment indicated that the historic trend of rising per-capita availability of food has not been reversed although developing countries may have to import even more food until efforts to control population growth have had time to take effect.

Several developments are especially significant for future production and trade patterns. The introduction of new high-yielding varieties of cereals requires additional inputs (mainly fertilizer, fuel and water) along with favourable weather conditions to sustain the potentially higher yields. Agricultural production has expanded into areas more susceptible to variations in weather. The average climatic conditions of the last 30 years have been especially favourable for food production. The above mentioned factors all point to the likelihood that both the frequency and the range of fluctuations in cereal output will increase. The tendencies toward an expanding cereal surplus in North America, an expanding deficit in developing countries and self-sufficiency in Europe will lead to a further expansion of the trade in cereals between North America and the developing countries. The growth of this trade enhances the possibility of conflict between rich and poor nations over the equity aspects of price levels and of restrictions on access to the lucrative markets of the developed countries.

#### 3.2 INTERNATIONAL INSTITUTIONS

The benefits to Canada from international institutions and arrangements affecting agriculture have been disappointing. The international commodity agreements for sugar, coffee and cocoa have failed to provide reasonable price stability for Canadian consumers while the provisions of the 1967 international wheat agreement, which might have conferred considerable benefit on producers, were not observed or enforced. The General Agreement on Tariffs and Trade is a useful instrument for setting international standards to encourage mutually advantageous trade among countries but little progress has been made under it in areas of concern to agriculture. The United Nations

agencies have been a useful medium of efficiently directing Canadian aid to developing countries and a greater percentage of Canadian food aid is now directed multilaterally through the World Food Program.

### 3.3 POLICIES OF OTHER NATIONS

The countries or trading blocs which have made policy changes with the greatest impact upon Canada during the past ten years are the European Common Market (including the United Kingdom), the USSR, and the United States (Table 32).

#### 3.3.1 European Economic Community

During the late 1960's, Canadians generally expected that trade with the Community would decline. Trade in agricultural commodities, which had averaged \$190 million during 1962-65, declined from \$221 million in 1966 to \$206 million in 1967 and \$156 million in 1968. It was feared that the evolution of the community, accompanied by continued development of the Common Agricultural Policy (CAP) would adversely affect Canada; first through the higher production within the community (encouraged by the high support prices under the CAP) resulting in less demand by countries in the community for Canadian exports; and second, through competition from surplus EEC products in traditional export markets. The decline experienced in 1967 and 1968 was expected to signal a continuing reduction in the demand for Canadian products.

In fact, trade with the EEC countries did not decline. The value of exports to the EEC reached \$230 million in 1970 and rose to \$533 million in 1974. The products which were feared most susceptible (wheat, feed grains, and oilseeds) all enjoyed increased sales in the common market in the early 1970's.

The years 1971 to 1974 were extremely volatile ones in international trade, and cannot be regarded as typical. In spite of the fact that, on the whole, Canadian trade with the EEC has increased, exports of specific commodities have declined, particularly those exported to the United Kingdom (UK) which entered the EEC in 1973. As exports to the UK became subject to the regulations of the CAP, Canadian exports of cheese, apples, oats and oilseeds declined. Cheese exports to the EEC declined from \$15.6 million in 1971 to \$0.2 million in 1974. Apple exports, which had reached an average of \$3.6 million in 1966-1970, declined to \$0.35 million in 1974. Wheat flour sales declined from \$4.0 million in 1971 to \$0.6 million in 1975. The value of oat exports fell from \$49 million in 1971 to \$0.35 in 1975. Exports of these products have declined through a combination of high levies, which made Canadian products uncompetitive in the EEC, and the increased production within the EEC which was encouraged by the high support prices.

Table 32 EXPORTS OF SELECTED AGRICULTURAL PRODUCTS TO EEC AND UNITED KINGDOM, CANADA,  
SELECTED YEARS, 1966 TO 1975

	1966		1966-70		1971		1973		1975	
	EEC	UK	EEC	UK	EEC	UK	EEC	UK	EEC	UK
Wheat Flour	16,981	16,690	8,039	7,755	4,009	3,940	1,392	1,385	610	603
% Change			-52%	-53%	-76%	-76%	-92%	-92%	-98%	-96%
Oats	8,420	607	3,733	330	4,582	74	223	223	350	-
% Change			-56%	-46%	-46%	-88%	-97%	-63%	96%	-
Rapeseed	14,606	436	11,489	412	72,570	1,010	52,900	426	7,262	775
% Change			-21%	-6%	+397%	+57%	+262%	-2%	-50%	+78%
Soybeans	10,867	10,424	5,719	5,397	3,916	3,899	4,643	4,616	285	8
% Change			-47%	-48%	-64%	-63%	-57%	-56%	-97%	-100%
Cheese	13,105	13,063	11,481	11,452	15,631	15,605	2,035	2,028	1,231	1,231
% Change			-12%	-12%	+19%	+19%	-84%	-84%	-91%	-91%
Apples	4,894	4,334	3,592	3,126	979	939	2,020	1,909	483	459
% Change			-26%	-28%	-80%	-78%	-59%	-56%	-90%	-89%

a Percent change figures from 1966 base.

Source: Agriculture Canada, Canada's Trade in Agricultural Products, Pub. 76/8.

### 3.3.2 USSR

A major policy change by the USSR was the decision in 1973 to make up a shortfall in production of wheat and feed grains through purchases on the world market. Previous shortfalls had been met by cutting back domestic demand, mainly that of the livestock sector. This time, the poor harvest was compensated for by international purchases of 14.6 million tonnes, amounting to 22 percent of world trade that year. (Average Russian imports had previously been running at less than 6 percent of world trade.) The purchases were made in a very judicious manner in a market which was still depressed from the surpluses of 1968-71, and their full extent was not known until most of the contracts were signed. The stock depletion created by the Russian purchases, coupled with poor harvests in 1973, caused grain prices to escalate sharply. The impact of these higher prices was felt throughout the world, as they worked through the food system to the retail level. The higher food prices of 1973-75 were a major contributor to sharp increases in worldwide rates of inflation.

Canada was primarily affected in two ways, by rising food prices and by higher export earnings. Food price increases of 33 percent during 1973-75 were caused partly by the high grain prices. However, Canada did benefit from reasonably good crops in those years and the value of grain exports increased from \$1.15 billion in 1973, to \$2.39 billion in 1974, to \$2.49 billion in 1975. This increase of \$1.25 billion in grain exports represented approximately 20 percent of the increase in the value of all exports in that year.

The reactions of Canadian policy to these high world prices included the Two-Price Wheat Act, consumer subsidies on fluid milk and skim milk powder, revisions to the Agricultural Stabilization Act, the development of the Western Grain Stabilization Act and changes in the domestic feed grain marketing policy.

### 3.3.3 United States

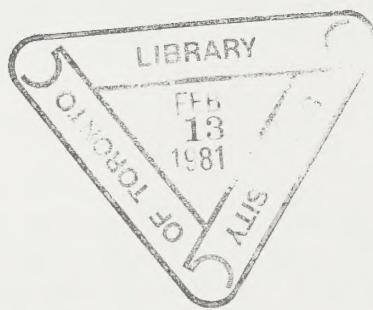
The United States has made some shifts from a protectionist agricultural policy towards a more open, market-oriented policy. The agricultural legislation of 1970 and 1973 reduced the amount of land diverted from production, departed from the parity concept of price support, established relatively low guaranteed price levels for most major crops, and drastically lowered the direct support of the agricultural industry (to about 2 percent of realized net income in 1975 from at least 25 percent in 1969).

However, while United States policymakers publicly support a free market approach, recent evidence suggests that the programs actually adopted will depend on the extent to which international markets can absorb the surpluses

over United States domestic requirements which are likely to build up during the next few years. The United States has consistently maintained a protectionist stance towards its livestock sector. Trade in dairy products is strictly controlled to maintain a domestic price level which, while somewhat below Canada's level, is above a free market equilibrium. United States actions affecting the beef trade in 1976 forced Canada to take protective measures and to establish, for the first time, beef import quotas to prevent becoming a dumping ground for products denied access to the United States market.

### 3.3.4 Canadian Responses

There are many other examples of changes in the policies of other countries which have forced a policy response by Canada, but those cited above are the major ones during the past ten years and serve to illustrate the types of reaction possible. The reactions to the loss of markets in the EEC, particularly Great Britain, were mixed. In the case of soybeans, cheese and apples, total exports have declined and, for cheese and apples, the domestic industry has suffered. For oats, flour and rapeseed, markets lost in the EEC have been replaced and total exports in volume and value have increased. The major impacts have been softened by adjustments in export strategies. The policy change in the USSR was felt by the economy as a whole through the impact on overall food prices and the secondary effects of those increases, and by the policy measures taken to protect consumers from increasing agricultural product costs. The reaction to the imposition of United States beef quotas has primarily been a defensive one designed to protect the domestic industry.





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